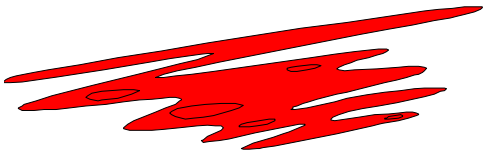
Diabetes-Related Inpatient Hospital Utilization in New Jersey, 1997



New Jersey Department of Health and Senior Services
Division of Family Health Services
Special Child, Adult and Early Intervention Services
Child and Adult Special Services

Diabetes Control Program

July 2001

Donald T. DiFrancesco
Acting Governor

Christine Grant
Commissioner

This publication was supported by Cooperative Agreement Number U32/CCU210619 from the CDC. Its contents are solely the responsibility of the authors and do not necessarily represent the official view of the CDC.

State of New Jersey

DEPARTMENT OF HEALTH AND SENIOR SERVICES
PO BOX 360
TRENTON, N.J. 08625-0360

www.state.nj.us/health

DONALD T. DIFRANCESCO
Acting Governor

CHRISTINE GRANT, JD, MBA
Commissioner

Dear Colleague:

The enclosed copy of *Diabetes-Related Inpatient Hospital Utilization in New Jersey, 1997* has been prepared through a collaborative effort of the New Jersey Department of Health and Senior Services' Diabetes Control Program (DCP), the Center for Health Statistics (CHS), and the New Jersey Diabetes Council.

This report is a follow up to *The Burden of Diabetes in New Jersey: A Surveillance Report* and the next step in defining the scope of the impact of diabetes. It looks first at hospitalizations for which diabetes is the primary diagnosis, and then at hospitalizations involving known complications of diabetes as the primary diagnosis and diabetes as a secondary condition.

The information presented in the hospital utilization report raises questions and highlights areas requiring further investigation. It proposes that "with the goal of optimal blood glucose control in mind, many hospitalizations could be viewed as failures." It challenges providers, patients, public health agencies, insurers, community agencies and others with a stake in quality care for people with diabetes to promote good blood sugar control and preventive measures aimed at reducing long-term complications of diabetes. To assist in these efforts we have included an order form to request materials produced by the National Diabetes Education Program.

I hope that you find this document of benefit to you and your associates. My staff and I welcome your comments and suggestions regarding the format and contents of this report and ask that you complete and return the enclosed evaluation form.

Sincerely,

Christine Grant
Commissioner

Diabetes-Related Inpatient Hospital Utilization in New Jersey, 1997

Donald T. DiFrancesco, Acting Governor
State of New Jersey

Christine Grant
Commissioner
New Jersey Department of Health and Senior Services

George T. DiFerdinando, Jr., M.D., M.P.H.
Deputy Commissioner
Public Health Services

Celeste Andriot-Wood
Assistant Commissioner
Family Health Services

Gloria Jones-Grant, C.S.W.
Director
Special Child, Adult and Early Intervention Services

Marilyn Gorney-Daley, D.O., M.P.H.
Senior Public Health Physician
Special Child, Adult and Early Intervention Services

Diabetes Control Program
July 2001

Acknowledgments

The report *Diabetes-Related Inpatient Hospital Utilization in New Jersey, 1997* is a project that reflects the investment of time and expertise by many co-workers and colleagues. It is not possible to include the names of all who have lent their support over the course of the development of this report; however, there are some contributors whose enthusiastic and generous assistance warrants special mention.

The collaboration of Vincent Yarmlak, Program Manager, Office of Research and Development, Facility Information Systems Unit of the New Jersey Department of Health and Senior Services was crucial to this work. He provided a subset of data from the 1997 New Jersey Hospital Discharges File (UB-92) and the file's technical documentation. Kenneth O'Dowd, Ph.D. of the Center for Health Statistics of the New Jersey Department of Health and Senior Services also provided valuable assistance in solving technical problems in the analysis of the data. Martin T. Zanna, M.D., M.P.H., Acting Director, Office of Planning and Development, Senior Services, New Jersey Department of Health and Senior Services, supplied critical clinical review of the document.

This report was compiled by the Diabetes Data Management Committee of the New Jersey Diabetes Control Program (NJDCP). The Committee acknowledges the support and collaboration of the members of the New Jersey Diabetes Council in all stages of the project, from planning through final proofreading. Without their assistance, this report would not have been possible.

Diabetes Data Management Committee:

Elizabeth Congdon
Program Manager
Child and Adult Special Services

Jose A. Gonzalez
Health Data Specialist
Diabetes Control Program

Rose Marie Martin
Research Scientist
Center for Health Statistics

Claudia Pollet, M.D.
Public Health Physician
Division on AIDS

Mary Ann Reiter
Public Health Consultant, Nutrition
Diabetes Control Program

Elizabeth Solan
Coordinator
Diabetes Control Program

Table of Contents

Abstract

Diabetes-Related Inpatient Hospital Utilization in New Jersey, 1997 is a surveillance report compiled by the New Jersey Department of Health and Senior Services Diabetes Control Program. Numbers of diabetes-related discharges, average length of stay in the hospital in days (LOS), age-adjusted rates per 10,000 population and crude rates per 10,000 diabetic population (estimated) are presented by age, gender, race, Hispanic origin and county of residence. Ninety-nine percent of New Jersey's diabetes-related hospital discharges involve persons 20 years of age and older. Therefore, the data presented are primarily representative of the adult population.

The reported New Jersey data were extracted from the Department's UB-92 file, which contains hospital discharge records for each inpatient stay in a New Jersey acute care hospital. National data were obtained from the summary of the 1997 National Hospital Discharge Survey conducted by the National Center for Health Statistics of the Centers for Disease Control and Prevention (CDC).[1] Two approaches were used to tabulate and analyze the data on diabetes-related discharges: (1) diabetes as the first listed or primary diagnosis and (2) any mention of diabetes. The primary diagnosis is the first listed diagnosis or condition listed as the main reason or cause for the hospitalization of a patient. Any mention of a diagnosis refers to hospital discharges with that diagnosis listed as one of nine possible diagnoses in the hospital records. Selected diagnostic categories (e.g. end stage renal disease, vision disorders, heart disease, etc.) were analyzed for discharges with any mention of diabetes. The diagnostic categories used in this report were selected in consultation with the New Jersey Diabetes Council. For data consistency, the ICD-9-CM codes used to compare state and national diabetes-related data contained only the diabetes codes from 250.0 through 250.9. A broader range of ICD-9-CM codes was used to define diabetes in the rest of the analysis. In addition to the diabetes codes from 250.0 through 250.9, this broader array contained the codes for postsurgical hypoinsulinemia (251.3); polyneuropathy in diabetes (357.2); diabetic retinopathy (362.0); diabetic cataract (366.41); diabetes mellitus complicating pregnancy, childbirth, or the puerperium (648.0); and neonatal diabetes mellitus (775.1).

List of Tables and Illustrations

Introduction

Diabetes is a serious disease that affects over a quarter million New Jerseyans. The foreseeable physical, psychological, sociological, and economic impact of diabetes on New Jersey's population in the 21st century presents a formidable challenge. Diabetes-related morbidity, mortality, and prevalence figures are staggering. CDC estimates for 1997 showed that about 309,355 adult New Jerseyans 18 years and over have diabetes.[2] In 1997, 36 of every 1,000 women who gave birth had diabetes as a medical risk factor. Diabetes was the underlying cause of death for 2,400 New Jerseyans in 1997, ranking sixth among the leading causes of death in the state.

Among the high-risk populations for diabetes are persons who are 45 years and older, obese, and/or inactive; persons who belong to minority racial and ethnic groups; and persons with a family history of diabetes. If diabetes is not diagnosed and treated in a timely and appropriate manner, severe damage to almost every organ in the human body can result. Diabetes is a leading cause of blindness, heart disease, end-stage renal disease, lower-extremity amputations, and stroke. However, many of the complications and deaths from diabetes are preventable with early diagnosis and appropriate management of the disease. Research has shown that early detection, proper medical treatment, and self-management are the best interventions to prevent complications of diabetes. Nevertheless, social, cultural, and economic barriers limit access to diagnosis and treatment in certain populations. These barriers, in combination with genetic and lifestyle factors, underlie the pronounced racial and ethnic disparities seen in health status and outcomes of people with diabetes. In response to this problem, federal and state health-policy makers have formulated approaches to eliminate disparities in health outcomes associated with diabetes. The creation of the New Jersey Diabetes Control Program (NJDCP) is a public health policy response that combines federal and state resources to reduce the burden of diabetes in New Jersey and eliminate ethno-racial disparities.

In keeping with this purpose, the NJDCP is involved in diabetes surveillance, community interventions targeted at raising awareness of diabetes and prevention of its complications, and projects aimed at improving diabetes prevention and treatment in New Jersey.

Findings

New Jersey and the Nation

- According to the National Hospital Discharge Survey (NHDS), the United States had an estimated 30,914,000 hospital discharges in 1997. About 1.6 percent (507,000) of these discharges listed diabetes (ICD-9-CM-codes 250.0-250.9) as the primary diagnosis (Table 1).
- In the same year, New Jersey's UB-92 File showed 1,426,875 hospital discharges with 1.1 percent (15,726) having diabetes (ICD-9-CM codes 250.0-250.9) listed as the primary diagnosis (Table 1).
- In 1997, the average length of stay (LOS) in hospitals for patients with diabetes was 2.3 days longer in New Jersey than in the nation as a whole. New Jersey's LOS is 8.1 days per

discharge while nationally, it is 5.8 days. Also, New Jersey had an average LOS that was 3.0 days longer than the national average in the age group of 65 years and over (Table 1 and Figures 1 and 2).

- The 1997 average LOS for discharges with diabetes as the primary diagnosis for the Northeast Region (Maine, New Hampshire, Vermont, Massachusetts, Connecticut, Rhode Island, New York, New Jersey and Pennsylvania) was longer than the average LOS in other regions of the nation. The Northeast had an average LOS of 7.6 days, the Midwest 4.9 days, the South 5.6 days and the West 5.2 days (Figure 3). It is not known what accounts for these regional variations.[3]
- Statewide and nationally, the average LOS in 1997 was slightly longer for males than for females. The national average was 5.9 days for males and 5.7 days for females. New Jersey's LOS showed a similar gender pattern, 8.3 days for males and 8.0 for females (Table 1).

New Jersey

- In 1997, diabetes (ICD-9-CM 250.0-250.9, 251.3, 357.2, 362.01-362.02, 366.41, 648.00-648.04, and 775.1) was listed as the primary diagnosis for 16,275 hospital discharges in New Jersey. Diabetes, along with diseases of the arteries, arterioles and capillaries, ranked eighth in terms of average LOS (8.0 days). The diagnoses with longer LOS were acute rheumatic fever (ICD9-CM 390-392) with an average LOS of 9.6 days; diseases of pulmonary circulation (ICD-9-CM 415-417) with 9.1 days; nephritis, nephrotic syndrome, and nephrosis (ICD-9-CM 580-589) with 8.9 days; conditions of the perinatal period (ICD-9-CM 760-769) with 8.6 days; infectious and parasitic diseases (ICD-9-CM 001-139) and chronic rheumatic heart disease (ICD9-CM 393-398), each with 8.5 days; and cerebrovascular disease (ICD-9-CM 430-438) with 8.1 days (Table 2).
- Of all hospital discharges recorded in 1997, 159,096 or 11.2 percent had diabetes listed among the nine possible discharge diagnoses. The average LOS for discharges with a mention of diabetes was 7.0 days compared to 3.9 days for discharges without a mention of diabetes (Table 3). This implies that the presence of diabetes increased the average LOS by 3.1 days. This is not unexpected, as the presence of diabetes is often a complicating factor in recovery from other diseases.
- The LOS for hospital discharges with diabetes as the primary diagnosis was analyzed by race. The average LOS was 8.1 days for whites and 8.0 days for both blacks and American Indians. For Asians, the average LOS was 5.7 days and for other races 7.0 days. It is important to note that the numbers of discharges among American Indians and Asians are small. With the small numbers in these groups, a few outlier lengths of stay may influence the results. Among non-Hispanics, the average LOS was one day longer than among Hispanics: 8.1 and 7.1 days respectively. However, caution should be used in interpreting all of the ethnicity data. The data for both Hispanics and non-Hispanics are probably understated due to the large number of discharges with unknown ethnicity. Because of the small numbers associated with the Hispanic data, the relative degree of understatement is probably much greater for Hispanic data than non-Hispanic data (Table 4).

- Age-adjusted rates of hospital discharges with any mention of diabetes as a listed diagnosis showed blacks with the highest discharge rate, 230.1 per 10,000 population. This may be reflective of higher rates of hypertension among blacks since hypertension often serves as a co-risk factor with diabetes for many of the long-term complications of diabetes (myocardial infarction, renal disease, etc.). It may also be reflective of the socio-economic and racial factors that affect access to primary care for blacks. Whites had 119.6 discharges per 10,000 population and other races had 202.8 discharges per 10,000 population. Hispanics had 162.7 discharges per 10,000 population and non-Hispanics 106.9. Again, this may be reflective of the socio-economic factors that often serve as barriers to good diabetes care. The average LOS for hospital discharges with any mention of diabetes was almost 1 day longer for blacks than for whites (7.7 and 6.8 days). LOS for Hispanics was 7.3 days and for non-Hispanics, 6.9 (Table 5).
- Not surprisingly, crude rates per 10,000 population for hospital discharges with any mention of diabetes increased with age. The older a person gets, the more likely he or she is to be hospitalized. In New Jersey, 50 percent of hospitalizations occur among Medicare patients. Older people are more likely to have other chronic conditions as well as diabetes mellitus, all of which contribute to higher rates of hospitalization. Males in the age group 65 and over had the highest crude rate per 10,000 populations for hospital discharges with any mention of diabetes (955.0). The rate for males 65 years and older was three times the rate for males 45 through 64 years old (294.1). Hispanic rates were higher than non-Hispanics rates regardless of age and gender (Table 6).
- The highest crude rates by county in New Jersey per 10,000 population for hospital discharges with any mention of diabetes were: Essex County 252.5, Hudson 248.1, Cumberland 234.6, Ocean 230.8, Cape May 224.7, Mercer 223.5, Salem 215.2, Atlantic 210.1, Camden 203.6, Passaic 203.0, and Union 201.6. The demographic characteristics of the population in these counties are striking for their relatively high percentages of elderly and/or minorities. The increased likelihood of co-morbid illnesses in the elderly and the socio-economic barriers to access to care among minorities may both contribute to diabetes-related hospitalizations in these counties. Contributing to higher rates in rural counties may be factors such as sparse resources, transportation gaps, and the presence of sub-populations of migrant workers who are largely uninsured and, therefore, seek care for medical problems late (Table 7).
- Essex County, with the second largest county population, had by far the largest number of hospital discharges in 1997 with any mention of diabetes, 18,957. Essex also had the highest age-adjusted rate, 184.4 per 10,000 standard population, and the second longest average LOS, 8.4 days. The longest average LOS was found in Hudson County, 8.8 days. Hudson had the second largest number of hospital discharges with any mention of diabetes (13,683) and the second highest age-adjusted rate, 172.7 per 10,000 standard population (Table 8).
- There were 9,931 hospital discharges for End Stage Renal Disease (ESRD) and any mention of diabetes (ICD-9-CM Procedure Code 39.95 or 55.60-55.69 or Disease Code V42.0, V45.1, or 585). The average LOS for ESRD was 10.4 days, the age-adjusted rate was 8.6 per 10,000 standard population, and the crude rate per 10,000 diabetic population was 395.0. The average LOS was similar for whites and blacks, 10.4 and 10.3 days respectively. However, when both race and gender are considered, the LOS was one day longer for white women

than for black males or females and almost 2 days longer than for white men. The age-adjusted rate per 10,000 population in blacks was more than three times that of whites (24.7 and 6.7, respectively). Age-adjusted rates per 10,000 standard population were highest for black females (25.3), as was the crude rate per 10,000 diabetic population (631.2). Crude rates per 10,000 diabetic population were approximately 76 percent higher in blacks than in whites, 585.3, and 331.8, respectively. National studies have shown that blacks are less likely to receive kidney transplants. They are also more likely to be hypertensive, obese, and uninsured; these are all factors that negatively influence the likelihood of good blood pressure and diabetes control (Table 9).

- Hispanics discharged with ESRD and any mention of diabetes had a slightly lower average LOS than non-Hispanics, 10.0 and 10.4 respectively. However, the age-adjusted discharge rate seen in Hispanics (13.3) was twice that of non-Hispanics (6.8) (Table 9).
- Essex, Middlesex, Hudson, and Bergen counties combined accounted for 4,127 of the hospital discharges with ESRD and any mention of diabetes; while Essex, Cumberland and Hudson Counties had the highest age-adjusted discharge rates. The average LOS for ESRD and any mention of diabetes ranged from 7.3 days in Salem to 12.2 in Hunterdon County (Table 10).
- In 1997, there were 15,161 discharges for other kidney diseases and any mention of diabetes. The average LOS for blacks in this category was a little longer than for whites, 10.9 and 10.5 respectively. The age-adjusted discharge rate for blacks was about three times that of whites (30.5 and 10.9). The crude rate per 10,000 diabetic population for this diagnostic category was about 33 percent higher for blacks (729.0) than for whites (548.6). Average LOS for non-Hispanics (10.7 days) was somewhat longer than for Hispanics (10.3 days). However, the age-adjusted discharge rate for Hispanics (16.9 per 10,000 standard population) was approximately 61 percent higher than that for non-Hispanics (10.5) (Table 11).
- There were 13,765 hospital discharges with any mention of diabetes as a listed diagnosis and selected vision disorders: diabetes with ophthalmic manifestations (ICD-9-CM 250.5) or disorders of the eye and adnexa (ICD-9-CM 360-379). The average LOS for the selected vision disorders was 5.2 days, the age-adjusted rate was 11.0 per 10,000 standard population, and the crude rate per 10,000 diabetic population was 547.5. In terms of race, ethnicity and gender, the average LOS was almost a day longer for black males than for white males and Hispanic males stayed in the hospitals 1.2 days longer than non-Hispanic males. However, the age-adjusted discharge rate for blacks (20.8) was about twice that of whites (10.1 per 10,000 standard population) (Table 12).
- In 1997, New Jerseyans had 4,466 amputations of the lower limb (amputations complete or partial of the toes, feet, or legs, ICD-9-CM 895-897, and lower limb amputation, ICD-9-CM Procedure Code 84.1). Diabetes was present as a diagnosis in 3,074 or 68.8 percent of all amputations of the lower limb. Ninety-nine percent (4,415) of all lower limb amputations were non-traumatic (Table 13).
- The average LOS for non-traumatic amputations for diabetics in New Jersey was 18.6 days. Blacks had an average LOS that was 1.2 days longer than whites (19.5 and 18.3, respectively). Black males had the highest age-adjusted rate of hospitalizations for non-traumatic amputations and diabetes (7.2 per 10,000 standard population). For all blacks, the

age-adjusted discharge rate was 5.5 per 10,000 standard population; for all whites, this rate was 2.3 per 10,000. The crude rate per 10,000 diabetic population was 116.5 for whites, 136.0 for blacks, and 100.2 for persons of other races. The age-adjusted rate was 2.8 per 10,000 standard population for all Hispanics. The average LOS was 4.9 days longer for Hispanics (23.2 days) as compared to non-Hispanics (18.3 days) (Table 14).

- The age-adjusted discharge rate per 10,000 standard population for non-traumatic amputations and a mention of diabetes was highest in Cumberland County with 3.9 diabetes-related amputations per 10,000 standard population. Essex had an age-adjusted rate of 3.7 amputations per 10,000 standard population, Mercer and Camden Counties had 3.0 each, and Atlantic, Hudson and Sussex had rates of 2.9 each. The rates per 10,000 diabetic population showed a similar ranking with Cumberland County having the highest rate, by far, of 179.2 per 10,000 diabetic population. Cumberland was followed by Ocean County 156.8, Sussex 145.6, Mercer 134.9, Essex 134.5, and Camden 134.4. In eight counties, the average LOS was over 20 days. For Hudson, it was 24.9 days, Hunterdon and Passaic 22.8 days, Essex 21.3 days, Union 21.1 days, Bergen 20.8 days, Middlesex 20.3 days, and Sussex 20.2 days (Table 15).
- Diabetes together with any of the following ICD9-CM cardiac diagnoses - hypertensive heart disease (402), ischemic heart disease (410-414), cardiomyopathy (425), and heart failure (428) - were mentioned in a total of 100,800 discharges in the 1997 New Jersey hospital discharge file. When both gender and race are considered, the age-adjusted discharge rate for diabetes and hypertensive heart disease per 10,000 standard population was highest for black females (16.3) as compared to a low rate of 4.4 for white males. For ischemic heart disease, the highest rate was among males of "other" races (75.8), as compared to a low rate of 34.5 for white females. For heart failure, the highest age adjusted rate was among females of races other than white or black (39.2), compared to a low rate of 19.9 for white females (Table 16).
- For hypertensive heart disease with any mention of diabetes, Union County had the highest crude rate of discharges per 10,000 diabetic population, 590.6. Union also had the highest age-adjusted rate, 10.9 per 10,000 standard population. Essex County had the longest average LOS for hypertensive heart disease, 10.3 days. Cumberland County had the highest age-adjusted rate for ischemic heart disease with any mention of diabetes, 59.8 per 10,000 standard population followed closely by Hudson County, 59.4. Hudson County also had the longest average LOS for ischemic heart disease, 8.0 days. Cumberland County had the highest age-adjusted rate for heart failure with any mention of diabetes, 33.0 per 10,000 standard population. The longest average LOS for heart failure was in Hudson County, 11.2 days (Table 17).
- For discharges with diabetes and hypertensive disease (ICD-9-CM 401-405), the average LOS for blacks was about a day longer than that for whites (7.3 and 6.4 days, respectively). The age-adjusted discharge rate for New Jersey's black population was more than two times that of whites (145.0 and 59.3 per 10,000 standard population, respectively) (Table 18).
- Both the numbers and rates of discharges for hypertensive disease with any mention of diabetes were highest in Essex County with 10,650 discharges and an age-adjusted rate per 10,000 standard population of 102.4. Essex also had the second-longest average LOS (8.0 days) after Hudson County (8.2 days) (Table 19).

- There were 126,383 discharges for major cardiovascular diseases (ICD-9-CM 390-448) with any mention of diabetes in 1997. For blacks, the average LOS was almost one day longer than for whites (8.0 and 7.1 days, respectively). The age-adjusted discharge rate for blacks was almost twice that of whites (177.2 and 89.6 per 10,000 standard population, respectively). However, the crude rate per 10,000 diabetic population was higher for whites than blacks (5,025.2 and 4,310.5). This may reflect the older age distribution of New Jersey's white population (Table 20).
- For discharges with any mention of diabetes and a major cardiovascular disease, the longest average LOS, found in Hudson, was 9.1 days. Essex County had the highest age-adjusted rate per 10,000 standard population, 134.1; and Hudson had the highest rate per 10,000 diabetic population, 6,184.5 (Table 21).
- In 1997, New Jersey had 16,015 hospital discharges for cerebrovascular disease (stroke, ICD-9-CM 430-438) and diabetes. By race, blacks had the longest average LOS, 10.3 days. This compares to an average LOS of 8.8 for whites and 9.2 for other races. The age-adjusted rate per 10,000 standard population for blacks was more than twice that for whites (23.0 and 10.0 respectively). When discharges were divided by the estimated diabetic population, the resulting crude discharge rate was 630.9 for whites, 573.9 for blacks, and 754.9 for other races. Hispanics had an average LOS that was more than a day and a half longer than non-Hispanics (10.6 and 9.0 days, respectively), and an age-adjusted discharge rate per 10,000 standard population that was 49 percent higher than non-Hispanics (14.0 and 9.4 respectively) (Table 22).
- Hudson County had the highest age-adjusted rate of strokes with diabetes as a co-morbidity per 10,000 standard population (15.9). Essex County had the second highest rate (15.5), followed by Salem County with a rate of 14.4, Camden with a rate of 14.1, and Mercer with 14.0. The highest crude rate of stroke per 10,000 diabetic population was seen in Salem, 851.6. The longest lengths of stay were seen in three counties: Hudson (12.1), Essex (11.3), and Middlesex (10.0) (Table 23).
- There were 9,203 hospital discharges with any mention of diabetes and pneumonia or influenza (ICD-9-CM 480.0-487.8). In this category, the average LOS was 12.8 days, the age-adjusted rate per 10,000 standard population was 6.5, and the crude rate per 10,000 diabetic population was 366.0. Blacks had an average LOS of 13.9 days, while for whites it was 12.4 days. Age-adjusted rates were higher for blacks (11.9 per 10,000 standard population) than whites (5.9 per 10,000 standard population). This relatively large variation may reflect differences in pneumoccocal and influenza immunization rates by race. The crude discharge rate per 10,000 diabetics was highest for patients of other racial origins (neither white nor black), 394.2 per 10,000 diabetic population. Hispanics had a longer average LOS (14.0 days) than non-Hispanics (12.7 days), and a higher age-adjusted rate per 10,000 standard population (9.3) than non-Hispanics (5.2) (Table 24).
- Essex County had the highest age-adjusted discharge rate per 10,000 standard population (9.9) for diabetes and influenza or pneumonia. The highest county rate per 10,000 diabetic population, 565.0, was seen in Cape May. The longest average LOS was in Hudson County, 17.2 days (Table 25).

- In 1997, there were 1,002 discharges of children (18 years or younger) with any mention of diabetes as one of the listed diagnoses. Seventy percent (700) of these had diabetes listed as the primary diagnosis. The average LOS for children with diabetes was almost one day longer than the average LOS of those with no mention of diabetes (4.1 and 3.2 days respectively) (Table 26).
- In 1997, there were 116,526 discharges involving diabetes mellitus without mention of complications (ICD-9-CM 250.0). Of the ten conditions sub-coded within the diabetes ICD-9 grouping (ICD-9-CM 250.0-250.9), the diabetes diagnosis with the longest average LOS was diabetes with peripheral circulatory disorders (ICD-9-CM 250.7), 12.7 days. Hispanics had a longer average LOS for this diagnosis (15.0 days) than did non-Hispanics (12.3 days), and blacks had a longer stay, on average, than whites (14.6 and 12.2, respectively). The most frequently recorded complication of diabetes was ICD-9-CM 250.4, diabetes with renal manifestations, with 11,270 discharges (Table 27).
- Diabetes with ketoacidosis (ICD-9-CM 250.1), diabetes with hyperosmolarity (ICD-9-CM 250.2), and diabetes with other coma (ICD-9-CM 250.3) have been designated as Ambulatory Care Sensitive (ACS) conditions. As such, it is believed that timely and effective ambulatory care in the 30-60 days prior to hospital admission might have prevented the hospitalization of patients having ACS diagnoses. For white patients under age 65, ACS conditions accounted for 25.8 percent of discharges listing diabetes as the primary diagnosis. For blacks, these potentially preventable discharges accounted for 33.7 percent of discharges listing diabetes as primary diagnosis. There were almost no differences between discharges of non-Hispanics and Hispanics for these conditions (28.6% and 28.4%, respectively) (Table 28).
- In 1997, the three ACS conditions represented 28.5 percent of all hospital discharges for persons under age 65 that listed diabetes as the primary diagnosis. For Camden County, the three ACS conditions represented almost 38 percent of the discharges with diabetes listed as primary diagnosis. Cumberland, Mercer and Sussex Counties also had relatively high proportions of discharges with ACS diabetes diagnoses (Table 29).

Conclusions

Several issues are raised by this report. Some of these will require further study. However, certain inescapable conclusions can be drawn:

1. In 1997, the presence of diabetes increased the average LOS of patients admitted to hospitals in New Jersey by 3.1 days. This is not unexpected as diabetes often serves as a co-morbid condition increasing the amount of time needed to recover from other conditions such as infection or surgery.

2. Not surprisingly, the largest number of discharges and longest average LOS were for those aged 65 and over. The likelihood of diabetes, as well as many other chronic diseases, increases with age. The presence of diabetes with other conditions, such as hypertension or certain vision disorders, increases the probability of hospitalization in any given year.

3. Diabetes ranked eighth among the diseases with the longest average LOS in New Jersey hospitals (8.0 days). When listed as the primary diagnosis, the average LOS did not differ for blacks and whites. However, Hispanics' average LOS was a day longer than for non-Hispanics. For any mention of diabetes, the average LOS was one day longer for blacks than for whites.

4. Counties in New Jersey with large minority populations (in particular Essex and Hudson Counties) had high crude rates of discharges per 10,000 diabetic population, high age-adjusted rates per 10,000 standard population, and longer average LOS. Indications are that patients with diabetes in these counties are sicker, leading to more hospitalizations and longer lengths of stay. It appears that diabetes control strategies are not being effectively utilized. Minorities often face a wide range of both financial and non-financial barriers to receiving quality primary care, which could prevent, defer, or shorten the stay of some hospitalizations.

5. The data indicate that New Jersey's average LOS of hospitalizations for diabetes is longer than the national average. In addition, New Jersey had an average LOS that is about 0.5 days longer than the average LOS of the entire northeast region (8.1 and 7.6 days respectively). The northeast also is reported to have longer LOS than the rest of the nation. Suggested explanations for the high LOS include the older population seen in the northeast, higher numbers of minorities, higher percentages of uninsured, higher numbers of Medicaid enrollees, and larger numbers of hospital beds. Each of these factors was examined to determine if it was positively correlated to the longer LOS in New Jersey. In 1997, New Jersey had a slightly higher percentage of uninsured (16.6% in New Jersey and 16.1% in the U.S.), a higher percentage of persons 65 and over (13.7% in New Jersey and 12.8% in the US), and a higher percentage of minority population (30.5% in New Jersey compared to 27.3% in the U.S.). Therefore, these three factors may be exerting some influence on the average length of stay. Since the uninsured have limited or no access to preventive care, it is logical to infer that they are sicker, and therefore stay longer when they are admitted into hospitals. Medicaid rates and number and rate of hospital beds were not greater for New Jersey than for the rest of the country, and therefore, seem not to be factors affecting New Jersey's LOS. However, a recent report on hospitalization during the last six months of life indicates that New Jersey is one of two Medicare referral regions where Medicare enrollees spent the most time as inpatients during the last six months of life.[4] This is an area requiring further investigation of the complex dynamic related to this finding and its relationship to length of stay for patients with diabetes. Other factors that deserve consideration in future study are the effects of individual physician practice patterns and managed care penetration on LOS.

6. There were more than 9,000 hospital discharges with any mention of diabetes and pneumonia or influenza. In 1997, the New Jersey Department of Health and Senior Services along with other interested partners initiated a campaign to promote immunization of persons 65 and over for influenza and pneumococcal disease. In collaboration with CDC, the NJDHSS' Diabetes Control Program supplemented that

campaign in 1998 with a similar program directed toward persons with diabetes. The high rate of hospitalization with diagnoses of diabetes and influenza or pneumonia in 1997 and the disparities by race and ethnicity are expected to decrease in future years as a result of the emphasis of these programs on reaching the most vulnerable populations.

7. The number of hospital discharges with a primary diagnosis of diabetes constitutes about 10 percent of all hospital discharges with any mention of diabetes. Primary diagnoses representing major complications of diabetes account for the vast majority of diabetes-related hospital discharges. For example, hospital discharges listing a major cardiovascular disease as the primary diagnosis and diabetes as a secondary diagnosis accounted for almost 33 percent of diabetes-related hospital discharges in 1997.

   In summary, since much of the care of diabetes is the responsibility of the patient with the disease, optimal treatment requires aggressive outpatient management with guidance from a team of health professionals. In most cases, this team should be under the direction of the primary care physician/provider. The team may also include an endocrinologist, a certified diabetes educator, a nurse practitioner, a nutritionist, a podiatrist, an eye care specialist, a dentist, a pharmacist, and others. The goal of the team working with the patient is optimal blood glucose control and the prevention of complications of diabetes. Reaching this goal will serve to prevent hospitalizations. With the goal of optimal blood glucose control in mind, many hospitalizations could be viewed as failures.

   Certain diabetes diagnoses (e.g. diabetes with ketoacidosis, diabetes with hyperosmolarity, and diabetes with other coma) have been identified as Ambulatory Care Sensitive (ACS) conditions; that is, diagnoses for which timely and effective ambulatory care within the last 30-60 days might have prevented hospital utilization. The ACS diagnoses are, most certainly, not the only diabetes-related diagnoses for which hospitalizations can be prevented. Studies conducted over the past decade have demonstrated that long-term complications of diabetes, such as heart disease, kidney failure, amputations, and eye disease, are preventable through a combination of a team approach to diabetes care, optimal self-management, and preventive medicine. It is, therefore, reasonable to conclude that prevention of the long-term complications of diabetes would also result in prevention of a large number of diabetes-related hospitalizations. In considering the preventability of hospitalizations, recently published Health Care Finance Administration data suggest directions for action. These data show that for New Jersey, only 61.5 percent of Medicare recipients with diabetes receive an annual HbA_{1c} test; 71.7 percent receive an eye exam every 2 years; and only 65.6 percent have a lipid profile done every 2 years.[5] Increasing the percentage of persons receiving the recommended preventive care for diabetes, (e.g. eye exams, foot exams, HbA_{1c} test, blood pressure measurement, influenza and pneumococcal vaccines, lipid profile) should be a goal for providers, patients, public health agencies, insurers, community agencies, and others with a stake in quality care for people with diabetes.

Tables and Illustrations

Figure 1

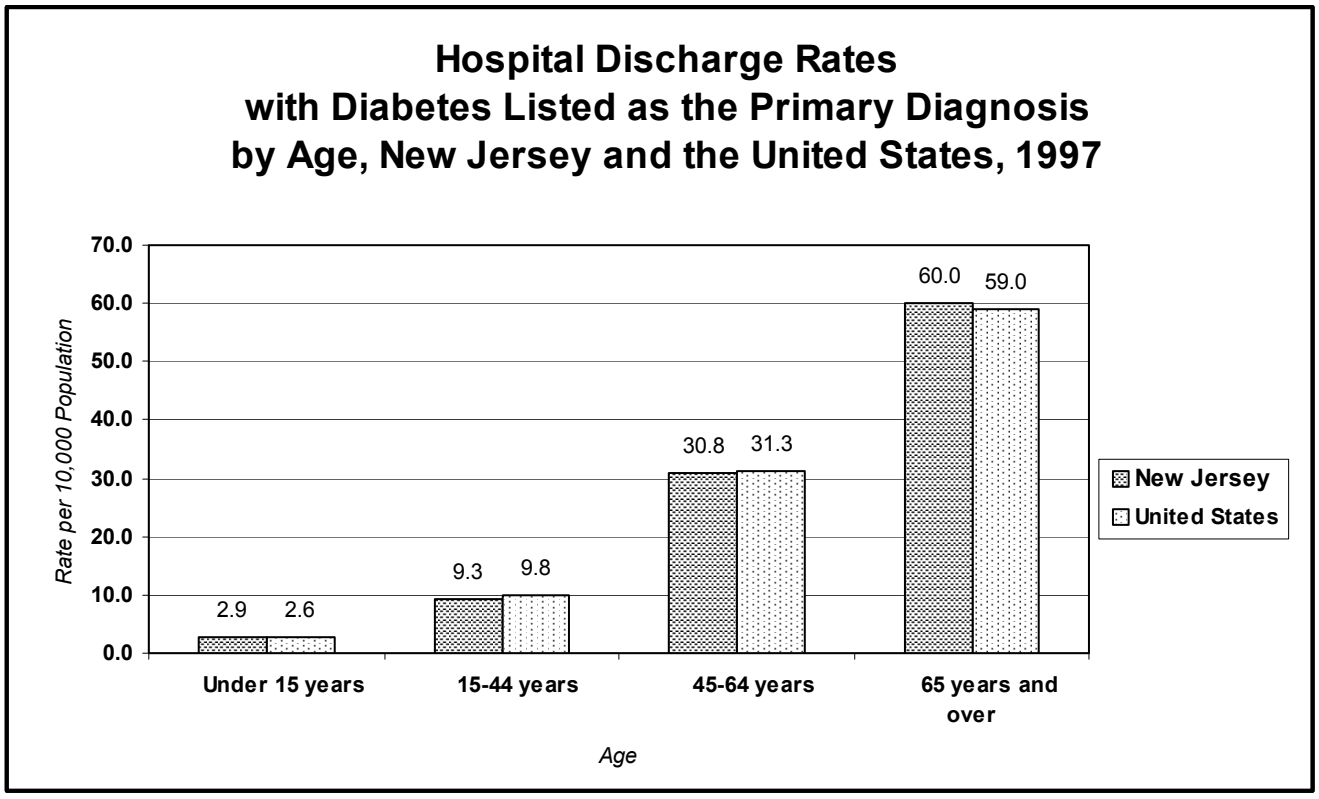


Figure 2

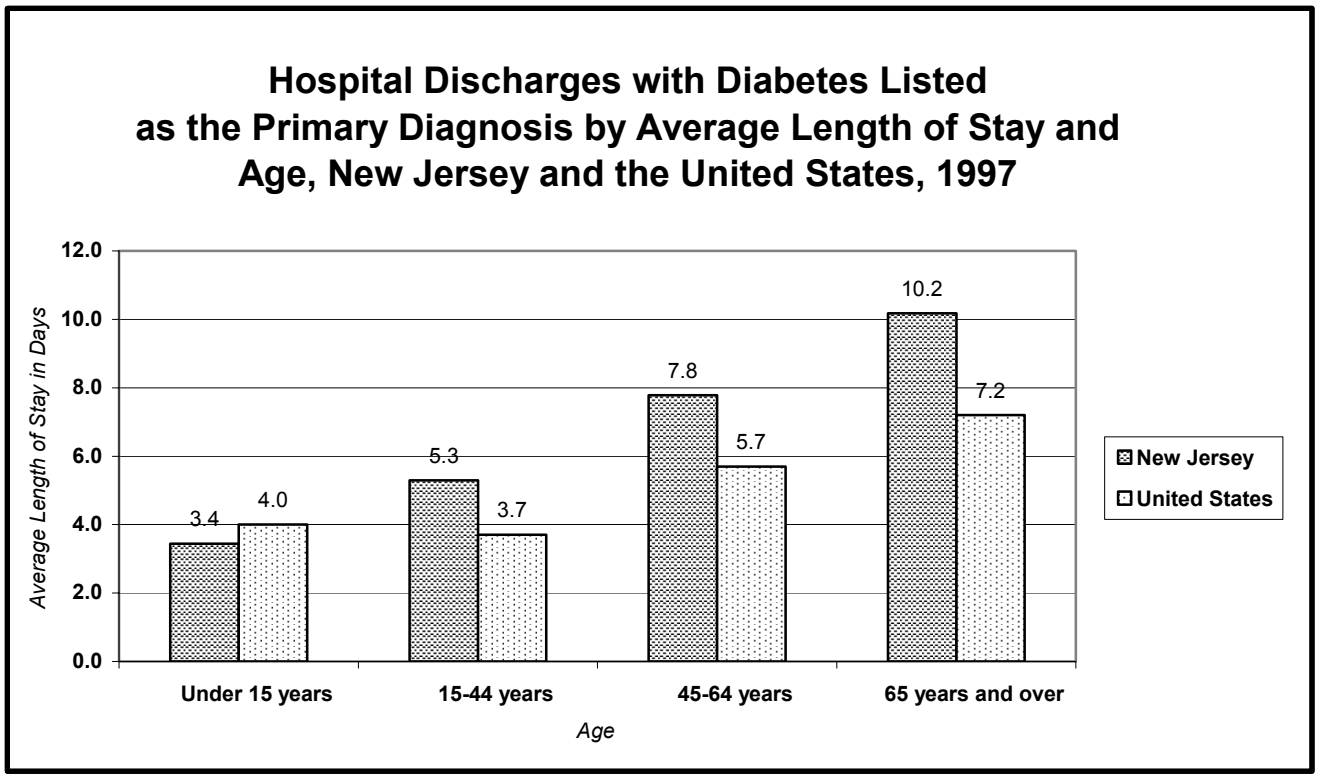


Figure 3

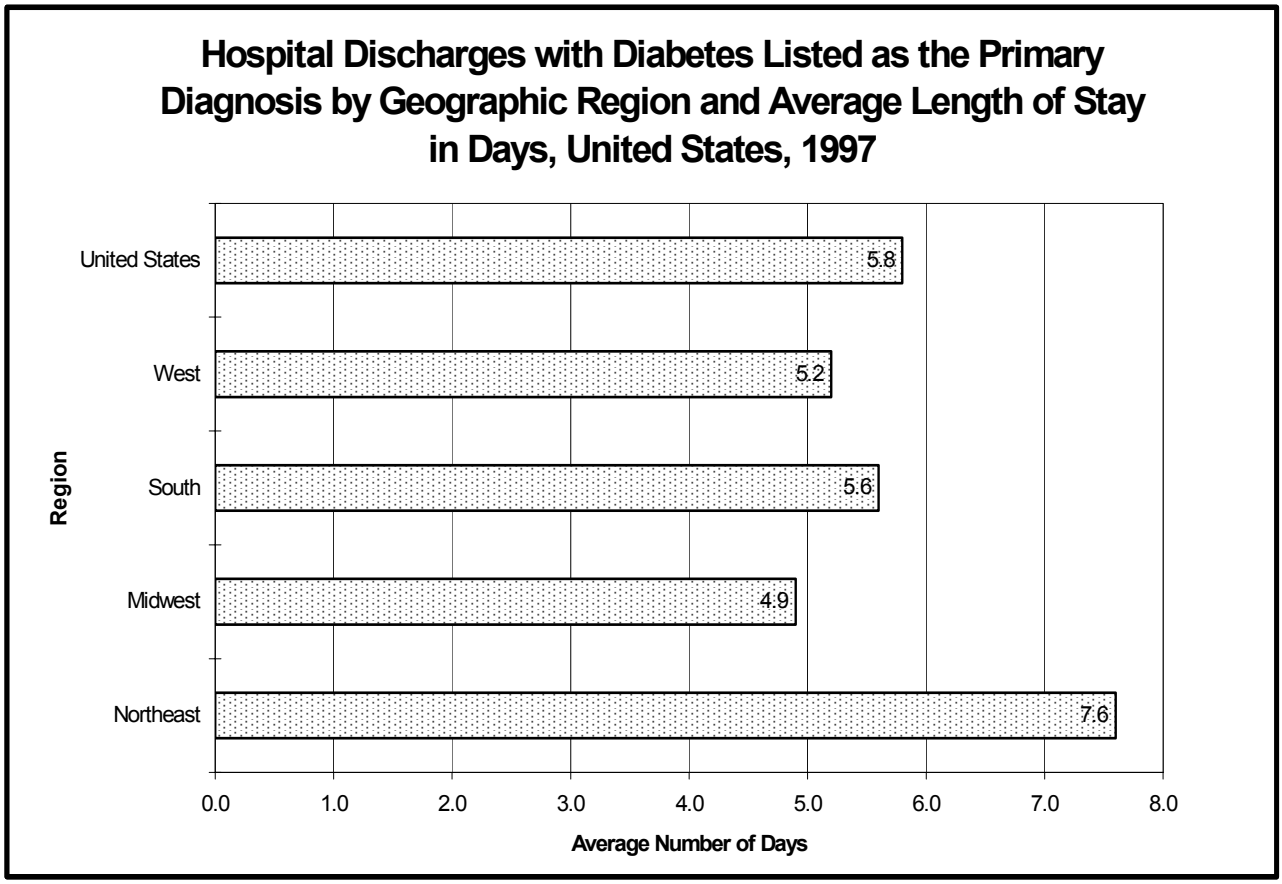

Hospital Discharges with Diabetes Listed as the Primary Diagnosis by Geographic Region and Average Length of Stay in Days, United States, 1997
United States
West
South
Midwest
Northeast
5.8
5.2
5.6
4.9
7.6
Region
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
Average Number of Days

Table 1
Hospital Discharges with Diabetes[1] Listed as the Primary Diagnosis by Age, Gender, Rate, and Average Length of Stay, New Jersey and the United States, 1997

Age and Gender	Discharges		Days of Hospitalization		Average Length of Stay in Days[2]
	Number of Discharges	Discharge Rate per 10,000 Population	Number of Days	Days Stay Per 10,000 Population	
United States					
Age					
Under 15 years	15,000	2.6	60,000	10.4	4.0
15-44 years	120,000	9.8	444,000	36.3	3.7
45-64 years	173,000	31.3	986,100	178.4	5.7
65 years and over	199,000	59.0	1,432,800	424.8	7.2
Total	507,000	18.8	2,922,900	108.4	5.8
Gender					
Male	243,000	18.4	1,400,946	106.3	5.9
Female	264,000	19.1	1,521,954	110.4	5.7
Total	**507,000**	**18.8**	**2,922,900**	**108.4**	**5.8**
New Jersey					
Age					
Under 15 years	478	2.9	1,645	9.8	3.4
15-44 years	3,271	9.3	17,327	49.0	5.3
45-64 years	5,347	30.8	41,600	239.3	7.8
65 years and over	6,630	60.0	67,457	610.1	10.2
Total	15,726	19.5	128,029	159.0	8.1
Gender					
Male	7,585	19.4	63,082	161.4	8.3
Female	8,141	19.6	64,947	156.7	8.0
Total	**15,726**	**19.5**	**128,029**	**159.0**	**8.1**

Source: Centers for Disease Control and Prevention, National Center for Health Statistics, 1997
Summary: National Hospital Discharge Survey and the New Jersey Department of Health and Senior Services, 1997 New Jersey Hospital Discharge File (UB-92).

[1] ICD-9-CM Code 250.

[2] Days of hospitalization divided by number of discharges.

Table 2
Hospital Discharges by Primary Diagnosis, Average Length of Stay in Days, and Average Charges in Dollars, New Jersey, 1997

Primary Diagnosis	Total Hospital Discharges	Length of Stay in Days		Charges in Dollars	
		Number of Days	Average Number of Days	Total	Mean
Infectious & parasitic diseases (001-139)	35,509	301,167	8.5	$686,570,775	$19,335
Malignant neoplasm (140-208)	60,462	378,599	6.3	1,062,355,598	17,571
Other neoplasm (210-239)	40,251	57,110	1.4	249,799,443	6,206
Disorders of thyroid gland (240-246)	1,400	5,298	3.8	14,334,570	10,239
Diabetes[1]	**16,275**	**129,989**	**8.0**	**275,852,214**	**16,949**
Other endocrine, nutritional, & metabolic disorders (251-279)[2]	18,522	118,087	6.4	235,430,334	12,711
Diseases of the blood & blood-forming organs (280-289)	13,794	63,774	4.6	151,681,183	10,996
Mental disorders (290-319)	59,501	439,701	7.4	592,531,925	9,958
Diseases of the nervous system & sense organs (320-389)[2]	64,426	78,965	1.2	352,003,276	5,464
Acute rheumatic fever (390-392)	53	507	9.6	1,661,866	31,356
Chronic rheumatic heart disease (393-398)	2,089	17,737	8.5	61,178,185	29,286
Hypertensive disease (401-405)	12,883	87,323	6.8	215,326,672	16,714
Ischemic heart disease (410-414)	75,909	365,824	4.8	1,499,142,565	19,749
Diseases of pulmonary circulation (415-417)	2,051	18,556	9.1	45,853,314	22,357
Other forms of heart disease (420-429)	63,354	419,171	6.6	1,137,976,528	17,962
Cerebrovascular disease (430-438)	31,555	254,554	8.1	607,647,458	19,257
Arteries, arterioles and capillaries diseases (440-448)	10,777	85,735	8.0	274,863,423	25,505
Veins, lymphatic & other circulatory diseases (451-459)	17,439	60,767	3.5	160,285,786	9,191
Diseases of the respiratory system (460-519)	107,665	662,709	6.2	1,601,483,392	14,875
Diseases of the digestive system (520-579)	151,557	533,475	3.5	1,593,864,711	10,517
Nephritis, nephrotic syndrome, and nephrosis (580-589)	4,660	41,249	8.9	107,649,620	23,101
Other diseases of the genitourinary system (590-629)	87,258	165,272	1.9	553,992,264	6,349
Complications in pregnancy, childbirth & puerperium (630-677)[2]	143,604	342,676	2.4	888,675,708	6,188
Diseases of the skin and subcutaneous tissue (680-709)	20,377	105,226	5.2	211,477,605	10,378
Musculoskeletal and connective tissue diseases (710-739)	83,315	169,947	2.0	745,827,034	8,952
Congenital anomalies (740-759)	6,015	14,171	2.4	58,721,843	9,763
Conditions of the perinatal period (760-779)[2]	2,783	23,861	8.6	53,734,817	19,308
Symptoms, signs & ill-defined conditions (780-799)	57,098	190,161	3.3	458,833,118	8,036
Injury and poisoning (800-999)	95,345	444,922	4.7	1,347,434,721	14,132
Factors influencing health status/contact with health services (V01-V82)[3]	140,948	460,976	3.3	825,789,277	5,859
Total	**1,426,875**	**6,037,509**	**4.2**	**$16,071,979,225**	**$11,264**

Source: New Jersey Department of Health and Senior Services, 1997 New Jersey Hospital Discharge File (UB-92).

[1] ICD-9-CM Codes: Diabetes (250.0-250.9), Postsurgical hypoinsulinemia (251.3), Polyneuropathy in diabetes (357.2), Diabetic retinopathy (362.01-362.02), Diabetic cataract (366.41), Diabetes in pregnancy but not gestational (648.00-648.04), or Neonatal diabetes mellitus (775.1).

[2] Excludes diabetes-related ICD-9-CM codes (251.3, 357.2, 362.01-362.02, 366.41, 648.00-648.04 or 775.1) falling within the designated range.

[3] Supplementary classification of factors influencing health status and contact with health services (V01-V82).

Table 3
Hospital Discharges by Primary Diagnosis, Mention or Absence of Diabetes, and Average Length of Stay, New Jersey, 1997

Primary Diagnosis	Total Discharges		Average Length of Stay in Days	
	Mention of Diabetes	Non-Mention of Diabetes	Mention of Diabetes	Non-Mention of Diabetes
Infectious & parasitic diseases (001-139)	4,917	30,592	11.6	8.0
Malignant neoplasms (140-208)	6,561	53,901	7.9	6.1
Other neoplasms (210-239)	1,858	38,393	3.1	1.3
Disorders of thyroid gland (240-246)	131	1,269	6.7	3.5
Diabetes[1]	**16,275**	**0**	**8.0**	**0.0**
Other endocrine, nutritional, & metabolic disorders (251-279)[2]	2,827	15,695	8.0	6.1
Diseases of the blood & blood-forming organs (280-289)	1,189	12,605	6.5	4.5
Mental disorders (290-319)	3,099	56,402	10.1	7.2
Diseases of the nervous system & sense organs (320-389)[2]	6,139	58,287	1.9	1.2
Acute rheumatic fever (390-392)	**	49	5.8	9.9
Chronic rheumatic heart disease (393-398)	412	1,677	8.3	8.5
Hypertensive disease (401-405)	4,101	8,782	7.7	6.3
Ischemic heart disease (410-414)	19,914	55,995	5.5	4.6
Diseases of pulmonary circulation (415-417)	332	1,719	10.4	8.8
Other forms of heart disease (420-429)	17,086	46,268	7.4	6.3
Cerebrovascular disease (430-438)	8,170	23,385	8.6	7.9
Arteries, arterioles and capillaries diseases (440-448)	2,690	8,087	9.9	7.3
Veins, lymphatic & other circulatory diseases (451-459)	1,611	15,828	6.6	3.2
Diseases of the respiratory system (460-519)	12,125	95,540	9.5	5.7
Diseases of the digestive system (520-579)	13,305	138,252	6.1	3.3
Nephritis, nephrotic syndrome, and nephrosis (580-589)	1,148	3,512	9.6	8.6
Other diseases of the genitourinary system (590-629)	6,020	81,238	4.5	1.7
Complications in pregnancy, childbirth & puerperium (630-677)[2]	695	142,909	3.5	2.4
Diseases of the skin and subcutaneous tissue (680-709)	3,385	16,992	8.5	4.5
Musculoskeletal and connective tissue diseases (710-739)	5,520	77,795	5.5	1.8
Congenital anomalies (740-759)	61	5,954	3.9	2.3
Conditions of the perinatal period (760-779)[2]	**	2,780	38.3	8.5
Symptoms, signs & ill-defined conditions (780-799)	7,322	49,776	4.6	3.2
Injury and Poisoning (800-999)	10,322	85,023	7.3	4.4
Factors influencing health status/contact with health services (V01-V82)[3]	1,874	139,074	4.7	3.3
Total	**159,096**	**1,267,779**	**7.0**	**3.9**

Source: New Jersey Department of Health and Senior Services, 1997 New Jersey Hospital Discharge File (UB-92).

[1] ICD-9-CM Codes: Diabetes (250.0-250.9), Postsurgical hypoinsulinemia (251.3), Polyneuropathy in diabetes (357.2), Diabetic retinopathy (362.01-362.02), Diabetic cataract (366.41), Diabetes in pregnancy but not gestational (648.00-648.04), or Neonatal diabetes mellitus (775.1).

[2] Excludes diabetes-related ICD-9-CM codes (251.3, 357.2, 362.01-362.02, 366.41, 648.00-648.04, or 775.1) falling within the designated range.

[3] Supplementary classification of factors influencing health status and contact with health services (V01-V82).
** Numbers may not add to the totals because the omission of small values.

Table 4
Hospital Discharges with Diabetes[1] Listed as the Primary Diagnosis by Race, Ethnicity, Gender, Number of Discharges, Number of Days, and Average Length of Stay, New Jersey, 1997

Race, Ethnicity, and Gender	Number of Hospital Discharges	Total Number of Days	Average Length of Stay in days[2]
Race and Gender			
White	**10,639**	**86,462**	**8.1**
Male	5,439	44,537	8.2
Female	5,200	41,925	8.1
Black	**4,411**	**35,246**	**8.0**
Male	2,119	16,535	7.8
Female	2,292	18,711	8.2
American Indian	**121**	**969**	**8.0**
Male	62	545	8.8
Female	59	424	7.2
Asian/Pacific Islander	**179**	**1,021**	**5.7**
Male	89	506	5.7
Female	90	515	5.7
Other	**612**	**4,278**	**7.0**
Male	279	1,736	6.2
Female	333	2,542	7.6
Unknown	**313**	**2,013**	**6.4**
Male	161	1,158	7.2
Female	152	855	5.6
Hispanic Ethnicity[3] and Gender			
Non-Hispanic	**12,141**	**98,339**	**8.1**
Male	6,178	49,995	8.1
Female	5,963	48,344	8.1
Hispanic	**1,867**	**13,240**	**7.1**
Male	874	6,323	7.2
Female	993	6,917	7.0
Unknown	**2,267**	**18,410**	**8.1**
Male	1,097	8,699	7.9
Female	1,170	9,711	8.3
Total	**16,275**	**129,989**	**8.0**
Male	8,149	65,017	8.0
Female	8,126	64,972	8.0

Source: New Jersey Department of Health and Senior Services, 1997 New Jersey Hospital Discharge File (UB-92).

[1] ICD-9-CM Codes: Diabetes (250.0-250.9), Postsurgical hypoinsulinemia (251.3), Polyneuropathy in diabetes (357.2), Diabetic retinopathy (362.01-362.02), Diabetic cataract (366.41), Diabetes in pregnancy but not gestational (648.00-648.04), or Neonatal diabetes mellitus (775.1).

[2] Number of days divided by number of hospital discharges.

[3] A Hispanic person may be of any race.

Table 5
Hospital Discharges with Any Mention of Diabetes[1] as a Listed Diagnosis by Race, Ethnicity, Gender, Number of Discharges, Number of Days, Age-Adjusted Rates, and Average Length of Stay, New Jersey, 1997

Race, Ethnicity, and Gender	Number of Hospital Discharges	Total Number of Days	Age-adjusted Rate Per 10,000 Standard Population	Average Length of Stay in days[2]
Race and Gender				
White	**118,859**	**814,088**	**119.6**	**6.8**
Male	56,709	369,043	131.1	6.5
Female	62,150	445,045	110.3	7.2
Black	**28,232**	**217,463**	**230.1**	**7.7**
Male	11,399	86,358	220.9	7.6
Female	16,833	131,105	237.2	7.8
Other	**8,234**	**54,539**	**202.8**	**6.6**
Male	3,704	23,770	201.4	6.4
Female	4,530	30,769	203.7	6.8
Unknown	**3,771**	**26,194**	N/A	**6.9**
Male	1,954	13,474	N/A	6.9
Female	1,817	12,720	N/A	7.0
Hispanic Ethnicity[3] and Gender				
Non-Hispanic	**121,772**	**844,514**	**106.9**	**6.9**
Male	57,061	376,034	115.2	6.6
Female	64,711	468,480	100.3	7.2
Hispanic	**13,906**	**100,991**	**162.7**	**7.3**
Male	5,895	42,354	155.2	7.2
Female	8,011	58,637	169.5	7.3
Unknown	**23,418**	**166,779**	N/A	**7.1**
Male	10,810	74,257	N/A	6.9
Female	12,608	92,522	N/A	7.3
Total	**159,096**	**1,112,284**	**128.8**	**7.0**

Source: New Jersey Department of Health and Senior Services, 1997 New Jersey Hospital Discharge File (UB-92).

[1] ICD-9-CM Codes: Diabetes (250.0-250.9), Postsurgical hypoinsulinemia (251.3), Polyneuropathy in diabetes (357.2), Diabetic retinopathy (362.01-362.02), Diabetic cataract (366.41), Diabetes in pregnancy but not gestational (648.00-648.04), or Neonatal diabetes mellitus (775.1).

[2] Number of days divided by number of hospital discharges.

[3] A Hispanic person may be of any race.

N/A: Not applicable.

Table 6
Hospital Discharge Rates with Any Mention of Diabetes[1] as a Listed Diagnosis by Race, Ethnicity, Gender, and Age, New Jersey, 1997

Race/Ethnicity	Males				Females				
Race	0 - 19	20-44	45 - 64	65 & Older	0 - 19	20 - 44	45 - 64	65 & Older	**Total**
White									
Hospital Discharges	329	3,866	17,164	35,350	427	4,001	14,417	43,305	118,859
Population	851,692	1,185,997	697,309	399,555	806,423	1,176,244	732,135	588,218	6,437,573
Rate[2]	3.9	32.6	246.1	884.7	5.3	34.0	196.9	736.2	184.6
Black									
Hospital Discharges	72	1,619	5,159	4,549	147	2,231	6,564	7,891	28,232
Population	200,424	223,757	95,877	36,406	192,075	242,612	122,246	56,645	1,170,042
Rate[2]	3.6	72.4	538.1	1,249.5	7.7	92.2	537.0	1,393.1	241.3
Other Races									
Hospital Discharges	26	432	1,533	1,713	58	435	1,511	2,526	8,234
Population	68,428	93,346	44,634	10,353	65,734	102,283	45,945	14,511	445,234
Rate[2]	3.8	46.3	343.5	1,654.6	8.8	42.5	328.9	1,740.7	184.9
Unknown									
Hospital Discharges	27	132	784	1,011	27	146	575	1,069	3,771
Population	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Rate[2]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Hispanic Ethnicity[3]									
Non-Hispanic									
Hospital Discharges	317	4,346	18,647	33,751	443	4,726	16,869	42,673	121,772
Population	952,370	1,292,195	761,421	422,658	905,570	1,318,792	815,934	625,024	7,093,964
Rate[2]	3.3	33.6	244.9	798.5	4.9	35.8	206.7	682.7	171.7
Hispanic									
Hospital Discharges	68	811	2,578	2,438	115	1,077	3,058	3,761	13,906
Population	168,174	210,905	76,399	23,656	158,662	202,347	84,392	34,350	958,885
Rate[2]	4.0	38.5	337.4	1,030.6	7.2	53.2	362.4	1,094.9	145.5
Unknown									
Hospital Discharges	69	892	3,415	6,434	101	1,010	3,140	8,357	23,418
Population	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Rate[2]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total Discharges	*454*	*6,049*	*24,640*	*42,623*	*659*	*6,813*	*23,067*	*54,791*	*159,096*
Total Population	*1,120,544*	*1,503,100*	*837,820*	*446,314*	*1,064,232*	*1,521,139*	*900,326*	*659,374*	*8,052,849*
Total Rate	*4.1*	*40.2*	*294.1*	*955.0*	*6.2*	*44.8*	*256.2*	*831.0*	*197.8*

Source: New Jersey Department of Health and Senior Services, 1997 New Jersey Hospital Discharge File (UB-92).

[1]ICD-9-CM Codes: Diabetes (250.0-250.9), Postsurgical hypoinsulinemia (251.3), Polyneuropathy in diabetes (357.2), Diabetic retinopathy (362.01-362.02), Diabetic cataract (366.41), Diabetes in pregnancy but not gestational (648.00-648.04), or Neonatal diabetes mellitus (775.1).

[2] Per 10,000 population.

[3]A Hispanic person may be of any race.

N/A: Not applicable.

Table 7
Hospital Discharge Rates with Any Mention of Diabetes[1] as a Listed Diagnosis by County and Age, New Jersey, 1997

County	Hospital Discharges by Age and Rate per 10,000 Population									
	Under 15	15-24	25-34	35-44	45-54	55-64	65-74	75-84	85+	Total
Atlantic - Number	13	34	111	295	632	998	1,459	1,088	340	4,970
Rate	2.6	11.5	30.8	77.0	224.9	501.2	789.0	851.4	780.7	210.1
Bergen - Number	50	69	189	537	1,192	2,260	4,280	3,903	1,260	13,740
Rate	3.3	7.5	16.4	36.4	95.5	266.5	597.2	836.6	817.7	161.4
Burlington - Number	23	48	190	356	745	1,391	1,996	1,522	415	6,686
Rate	2.5	9.1	30.7	48.3	134.4	398.7	751.9	1,045.0	858.7	160.0
Camden - Number	46	77	257	584	1,244	1,896	2,853	2,573	743	10,273
Rate	3.8	12.5	35.2	69.1	203.5	477.9	813.0	1,195.2	1,096.5	203.6
Cape May - Number	6	22	45	92	175	370	683	625	187	2,205
Rate	3.0	22	37.3	62.8	151.9	397.5	631.9	823.7	779.5	224.7
Cumberland - Number	21	38	62	153	349	675	987	811	209	3,305
Rate	6.4	21.0	31.6	67.1	206.5	594.5	950.0	1,183.3	998.1	234.6
Essex - Number	81	183	707	1,260	2,653	4,068	5,164	3,693	1,148	18,957
Rate	5.1	18.2	62.4	100.8	287.8	645.3	995.5	1,096.3	977.7	252.5
Gloucester - Number	9	42	114	172	421	684	1,118	1,080	231	3,871
Rate	1.5	13.6	32.7	39.3	137.4	362.4	698.6	1,214.7	861.0	157.3
Hudson - Number	59	108	320	791	1,645	2,810	4,156	2,798	996	13,683
Rate	5.4	14.8	33.5	88.8	250.2	584.4	1,054.6	1,141.4	1,305.9	248.1
Hunterdon - Number	10	3	27	47	116	233	442	392	69	1,339
Rate	3.9	2.4	16.5	18.6	59.3	256.2	708.3	946.2	473.6	111.0
Mercer - Number	18	54	183	435	906	1,305	2,107	1,867	497	7,372
Rate	2.7	11.8	38.8	76.4	214.5	481.2	872.2	1,243.8	1,010.8	223.5
Middlesex - Number	74	89	327	751	1,538	2,395	4,137	3,222	794	13,327
Rate	5.4	9.1	28.3	61.1	169.3	406.8	825.6	1,187.1	1,098.7	188.2
Monmouth - Number	27	94	231	574	1,261	2,030	3,208	2,655	815	10,895
Rate	2.1	14.1	29	52.3	152	412.8	779.5	937.6	836.1	182.7
Morris - Number	31	48	105	242	601	1,004	1,666	1,401	515	5,613
Rate	3.4	8.9	16.9	28.2	82.2	258.3	633.8	825.4	836.4	123.6
Ocean - Number	35	63	172	293	842	1,513	3,582	3,536	1,060	11,096
Rate	3.6	13.2	31	40.6	159.4	395.1	615.7	764.7	844.1	230.8
Passaic - Number	45	94	307	588	1,339	1,952	2,600	2,210	690	9,825
Rate	4.2	14.3	42.1	73.7	224.4	506.1	811.8	1,030.0	942.9	203.0
Salem - Number	1	5	28	80	174	300	389	349	95	1,421
Rate	0.7	6.4	35.1	73.2	200.6	531.3	710.8	1,000.9	842.9	215.2
Somerset - Number	22	11	64	133	353	581	1,060	828	270	3,322
Rate	4.0	3.8	14.2	25.3	87.1	237.7	616.8	851.2	727.0	120.0
Sussex - Number	8	23	31	103	278	349	538	454	171	1,955
Rate	2.3	14.7	15.4	35.4	139.2	407.8	799.3	957.2	974.4	137.6
Union - Number	30	76	244	549	1,012	1,827	3,001	2,611	692	10,042
Rate	3.1	13.1	33.8	66.2	154.6	394.3	724.7	993.6	827.7	201.6
Warren - Number	4	4	32	98	154	286	524	469	147	1,718
Rate	1.8	3.7	23.5	56.1	117.1	368.3	730.4	949.2	969.7	174.8
Unknown - Number	11	25	63	199	429	721	1,057	763	213	3,481
Rate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total - Number	624	1,210	3,809	8,332	18,059	29,648	47,007	38,850	11,557	159,096
Rate	3.7	12.4	32.6	60.2	171.1	434.3	788.2	1,007.8	933.7	197.8

Source: New Jersey Department of Health and Senior Services, 1997 New Jersey Hospital Discharge File (UB-92).

[1] ICD-9-CM Codes: Diabetes (250.0-250.9), Postsurgical hypoinsulinemia (251.3), Polyneuropathy in diabetes (357.2), Diabetic retinopathy (362.01-362.02), Diabetic cataract (366.41), Diabetes in pregnancy but not gestational (648.00-648.04), or Neonatal diabetes mellitus (775.1).

N/A: Not applicable.

Table 8
Hospital Discharges with Any Mention of Diabetes[1] as a Listed Diagnosis by County, Number of Discharges, Age-Adjusted Rates, Number of Days and Average Length of Stay, New Jersey, 1997

County	Number of Hospital Discharges	Age-Adjusted Rate Per 10,000 Standard Population	Length of Stay in Days	
			Number of Days	Average Length of Stay in Days
Atlantic	4,970	140.3	35,066	7.1
Bergen	13,740	88.2	91,719	6.7
Burlington	6,686	118.7	39,569	5.9
Camden	10,273	144.0	68,039	6.6
Cape May	2,205	116.4	14,357	6.5
Cumberland	3,305	161.2	19,358	5.9
Essex	18,957	184.4	158,625	8.4
Gloucester	3,871	116.2	23,809	6.2
Hudson	13,683	172.7	120,728	8.8
Hunterdon	1,339	86.2	8,311	6.2
Mercer	7,372	150.2	46,997	6.4
Middlesex	13,327	132.3	95,517	7.2
Monmouth	10,895	122.4	72,214	6.6
Morris	5,613	86.9	36,155	6.4
Ocean	11,096	109.9	64,623	5.8
Passaic	9,825	147.6	70,235	7.2
Salem	1,421	137.6	7,811	5.5
Somerset	3,322	83.5	19,605	5.9
Sussex	1,955	117.8	12,297	6.3
Union	10,042	122.3	73,766	7.4
Warren	1,718	110.6	12,367	7.2
Unknown	3481	N/A	21,116	6.1
Total	**159,096**	**128.8**	**1,112,284**	**7.0**

Source: New Jersey Department of Health and Senior Services, 1997 New Jersey Hospital Discharge File (UB-92).

[1] ICD-9-CM Codes: Diabetes (250.0-250.9), Postsurgical hypoinsulinemia (251.3), Polyneuropathy in diabetes (357.2), Diabetic retinopathy (362.01-362.02), Diabetic cataract (366.41), Diabetes in pregnancy but not gestational (648.00-648.04), or Neonatal diabetes mellitus (775.1).

N/A: Not applicable.

Table 9
Hospital Discharges with Any Mention of Diabetes[1] and End Stage Renal Disease (ESRD)[2] as Listed Diagnoses by Race, Ethnicity, Gender, Number of Discharges, Average Length of Stay, and Age-Adjusted and Crude Rates, New Jersey, 1997

Race, Ethnicity, and Gender	Number of Hospital Discharges	Average Length of Stay in Days[3]	Age-Adjusted Rate Per 10,000 Standard Population	Crude Rate per 10,000 Diabetic Population[4]
Race and Gender				
White	**6,302**	**10.4**	**6.7**	**331.8**
Male	3,279	9.5	7.7	381.3
Female	3,023	11.3	6.0	290.9
Black	**2,969**	**10.3**	**24.7**	**585.3**
Male	1,217	10.4	23.8	529.8
Female	1,752	10.3	25.3	631.2
Other	**451**	**11.5**	**11.5**	**418.3**
Male	209	11.6	11.6	428.0
Female	242	11.4	11.4	410.2
Unknown	**209**	**12.6**	N/A	N/A
Male	112	11.7	N/A	N/A
Female	97	13.7	N/A	N/A
Hispanic Origin[5] and Gender				
Non-Hispanic	**7,299**	**10.4**	**6.8**	N/A
Male	3,563	9.7	7.4	N/A
Female	3,736	11.0	6.4	N/A
Hispanic	**1,113**	**10.0**	**13.3**	N/A
Male	498	9.2	13.3	N/A
Female	615	10.7	13.3	N/A
Unknown	**1,519**	**10.9**	N/A	N/A
Male	756	10.6	N/A	N/A
Female	763	11.3	N/A	N/A
Total	**9,931**	**10.4**	**8.6**	**395.0**

Source: New Jersey Department of Health and Senior Services, 1997 New Jersey Hospital Discharge File (UB-92).

[1] ICD-9-CM Codes: Diabetes (250.0-250.9), Postsurgical hypoinsulinemia (251.3), Polyneuropathy in diabetes (357.2), Diabetic retinopathy (362.01-362.02), Diabetic cataract (366.41), Diabetes in pregnancy but not gestational (648.00-648.04), or Neonatal diabetes mellitus (775.1).

[2]ICD-9-CM Procedure Codes for ESRD: Chronic Dialysis 39.95 or Renal Transplantation 55.60-55.69, or Disease Codes V42.0, V45.1 or 585.

[3]Number of days divided by number of hospital discharges.

[4]Synthetic estimates for 1994 from the 1999 report, *The Burden of Diabetes in New Jersey: A Surveillance Report,* were used for denominators.

[5]A Hispanic person may be of any race.

N/A: Not applicable or not available.

Table 10
Hospital Discharges with Any Mention of Diabetes[1] and End Stage Renal Disease (ESRD)[2] as Listed Diagnoses by County, Number of Discharges, Average Length of Stay and Age-Adjusted and Crude Rates, New Jersey, 1997

County	Number of Hospital Discharges	Average Length of Stay in Days[3]	Age-Adjusted Rate Per 10,000 Standard Population	Crude Rate per 10,000 Diabetic Population[4]
Atlantic	327	9.3	10.4	420.8
Bergen	803	10.2	5.3	285.4
Burlington	403	8.6	7.8	343.7
Camden	535	8.3	7.9	347.4
Cape May	135	7.5	8.4	391.1
Cumberland	277	7.5	14.3	636.3
Essex	1,469	11.7	15.3	513.3
Gloucester	169	9.0	5.9	251.2
Hudson	912	11.9	12.1	529.3
Hunterdon	59	12.2	4.0	194.1
Mercer	445	11.4	10.0	414.2
Middlesex	943	10.3	9.5	465.2
Monmouth	695	9.6	8.4	394.1
Morris	312	11.2	4.9	250.5
Ocean	501	8.8	5.1	304.5
Passaic	683	11.9	10.9	478.7
Salem	81	7.3	10.0	374.9
Somerset	207	9.8	5.3	274.7
Sussex	72	9.2	4.5	218.5
Union	680	10.9	9.1	389.6
Warren	78	11.9	4.7	289.3
Unknown	145	12.0	N/A	N/A
Total	**9,931**	**10.4**	**8.6**	**395.0**

Source: New Jersey Department of Health and Senior Services, 1997 New Jersey Hospital Discharge File (UB-92).

[1] ICD-9-CM Codes: Diabetes (250.0-250.9), Postsurgical hypoinsulinemia (251.3), Polyneuropathy in diabetes (357.2), Diabetic retinopathy (362.01-362.02), Diabetic cataract (366.41), Diabetes in pregnancy but not gestational (648.00-648.04), or Neonatal diabetes mellitus (775.1).

[2]ICD-9-CM Procedure Codes for ESRD: Chronic Dialysis 39.95 or Renal Transplantation 55.60-55.69, or Disease Codes V42.0, V45.1 or 585.

[3]Number of days divided by number of hospital discharges.

[4]Synthetic estimates for 1994 from the 1999 report, *The Burden of Diabetes in New Jersey: A Surveillance Report*, were used for denominators.

N/A: Not applicable.

Table 11
Hospital Discharges with Any Mention of Diabetes[1] and Kidney Diseases[2] as Listed Diagnoses by Race, Ethnicity, Gender, Number of Discharges, Average Length of Stay and Age-Adjusted and Crude Rates, New Jersey, 1997

Race, Ethnicity, and Gender	Number of Hospital Discharges	Average Length of Stay in Days[3]	Age-Adjusted Rate Per 10,000 Standard Population	Crude Rate per 10,000 Diabetic Population[4]
Race and Gender				
White	**10,419**	**10.5**	**10.9**	**548.6**
Male	5,314	10.1	12.4	617.9
Female	5,105	11.0	9.8	491.3
Black	**3,698**	**10.9**	**30.5**	**729.0**
Male	1,610	10.6	31.4	700.9
Female	2,088	11.1	29.8	752.3
Other	**740**	**11.0**	**18.6**	**686.3**
Male	331	11.2	18.4	677.9
Female	409	11.0	19.0	693.3
Unknown	**304**	**12.0**	N/A	N/A
Male	151	11.7	N/A	N/A
Female	153	12.4	N/A	N/A
Hispanic Origin[5] and Gender				
Non-Hispanic	**11,469**	**10.7**	**10.5**	N/A
Male	5,659	10.3	11.6	N/A
Female	5,810	11.0	9.7	N/A
Hispanic	**1,414**	**10.3**	**16.9**	N/A
Male	608	10.0	16.2	N/A
Female	806	10.5	17.5	N/A
Unknown	**2,278**	**10.7**	N/A	N/A
Male	1,139	10.4	N/A	N/A
Female	1,139	11.1	N/A	N/A
Total	**15,161**	**10.6**	**12.8**	**603.0**

Source: New Jersey Department of Health and Senior Services, 1997 New Jersey Hospital Discharge File (UB-92).

[1] ICD-9-CM Codes: Diabetes (250.0-250.9), Postsurgical hypoinsulinemia (251.3), Polyneuropathy in diabetes (357.2), Diabetic retinopathy (362.01-362.02), Diabetic cataract (366.41), Diabetes in pregnancy but not gestational (648.00-648.04), or Neonatal diabetes mellitus (775.1).

[2] ICD-9-CM Codes for Kidney Diseases: Diabetes with renal manifestations (250.4), Nephrotic syndrome (581.81), Nephritis and nephropathy (583.81), Acute renal failure (584), Renal failure (586), Renal sclerosis (587), Disorders resulting from impaired renal function (588), and Infections of kidney (590).

[3] Number of days divided by number of hospital discharges.

[4] Synthetic estimates for 1994 from the 1999 report, *The Burden of Diabetes in New Jersey: A Surveillance Report,* were used for denominators.

[5] A Hispanic person may be of any race.

N/A: Not applicable or not available.

Table 12
Hospital Discharges with Any Mention of Diabetes[1] and Selected Vision Disorders[2] as Listed Diagnoses by Race, Ethnicity, Gender, Number of Discharges, Average Length of Stay, and Age-Adjusted and Crude Rates, New Jersey, 1997

Race, Ethnicity, and Gender	Number of Hospital Discharges	Average Length of Stay in Days[3]	Age-Adjusted Rate Per 10,000 Standard Population	Crude Rate Per 10,000 Diabetic Population[4]
Race and Gender				
White	**10,197**	**5.0**	**10.1**	**536.9**
Male	4,559	4.9	10.5	530.1
Female	5,638	5.2	9.8	542.5
Black	**2,553**	**5.9**	**20.8**	**503.3**
Male	996	5.8	19.3	433.6
Female	1,557	5.9	21.9	561.0
Other	**729**	**4.8**	**18.3**	**676.1**
Male	331	5.1	18.3	677.9
Female	398	4.6	18.3	674.6
Unknown	**286**	**5.5**	N/A	N/A
Male	132	6.2	N/A	N/A
Female	154	4.9	N/A	N/A
Hispanic Origin[5] and Gender				
Non-Hispanic	**10,821**	**5.1**	**9.4**	N/A
Male	4,770	4.9	10.2	N/A
Female	6,051	5.2	8.7	N/A
Hispanic	**1,055**	**5.8**	**12.6**	N/A
Male	461	6.1	12.3	N/A
Female	594	5.6	12.9	N/A
Unknown	**1,889**	**5.5**	N/A	N/A
Male	787	5.4	N/A	N/A
Female	1,102	5.7	N/A	N/A
Total	**13,765**	**5.2**	**11.0**	**547.5**

Source: New Jersey Department of Health and Senior Services, 1997 New Jersey Hospital Discharge File (UB-92).

[1] ICD-9-CM Codes: Diabetes (250.0-250.9), Postsurgical hypoinsulinemia (251.3), Polyneuropathy in diabetes (357.2), Diabetic retinopathy (362.01-362.02), Diabetic cataract (366.41), Diabetes in pregnancy but not gestational (648.00-648.04), or Neonatal diabetes mellitus (775.1).

[2] ICD-9-CM Codes for Vision Disorders: Diabetes with ophthalmic manifestation (250.5) or Disorders of the eye and adnexa (360-379).

[3] Number of days divided by number of hospital discharges.

[4] Synthetic estimates for 1994 from the 1999 report, *The Burden of Diabetes in New Jersey: A Surveillance Report*, were used for denominators.

[5] A Hispanic person may be of any race.

N/A: Not applicable or not available.

Table 13
Hospital Discharges with and without Diabetes
Listed as a Diagnosis and Traumatic and Non-traumatic Amputations
Listed as a Procedure by Number and Percent, New Jersey, 1997

Categories	Number and Percent
Traumatic amputations of the lower limb[1]	51
Without diabetes	50
Percent	98.0%
With diabetes[2]	1
Percent	2.0%
Non-traumatic amputations of the lower limb[3]	4,415
Without diabetes	1,342
Percent	30.4%
With diabetes	3,073
Percent	69.6%
Total Amputations	4,466
Without diabetes	1,392
Percent	31.2%
With diabetes	3,074
Percent	68.8%

Source: New Jersey Department of Health and Senior Services, 1997 New Jersey Hospital Discharge File (UB-92).

[1] ICD-9-CM Procedure Code (84.1) and Lower limb amputation (ICD-9-CM 895-897).

[2] ICD-9-CM Codes: Diabetes (250.0-250.9), Postsurgical hypoinsulinemia (251.3), Polyneuropathy in diabetes (357.2), Diabetic retinopathy (362.01-362.02), Diabetic cataract (366.41), Diabetes in pregnancy but not gestational (648.00-648.04) or Neonatal diabetes mellitus (775.1).

[3] ICD-9-CM Code: Lower limb amputation procedure (84.1) in the absence of Lower limb amputation codes ICD-9-CM 895-897.

Table 14
Hospital Discharges with Any Mention of Diabetes[1] as a Listed Diagnosis and Non-Traumatic Amputations of the Lower Limb[2] by Race, Ethnicity, Gender, Number of Discharges, Average Length of Stay, and Age-Adjusted and Crude Rates, New Jersey, 1997

Race, Ethnicity, and Gender	Number of Hospital Discharges	Average Length of Stay in Days[3]	Age-Adjusted Rate Per 10,000 Standard Population	Crude Rate Per 10,000 Diabetic Population[4]
Race and Gender				
White	**2,213**	**18.3**	**2.3**	**116.5**
Male	1,388	17.7	3.3	161.4
Female	825	19.2	1.5	79.4
Black	**690**	**19.5**	**5.5**	**136.0**
Male	369	19.4	7.2	160.6
Female	321	19.7	4.2	115.7
Other	**108**	**19.9**	**0.1**	**100.2**
Male	61	19.5	0.1	124.9
Female	47	20.4	0.1	79.7
Unknown	**62**	**18.3**	N/A	N/A
Male	35	20.0	N/A	N/A
Female	27	16.1	N/A	N/A
Hispanic Origin[5] and Gender				
Non-Hispanic	**2,354**	**18.3**	**2.1**	N/A
Male	1,421	18.2	2.9	N/A
Female	933	18.5	1.4	N/A
Hispanic	**231**	**23.2**	**2.8**	N/A
Male	139	20.1	3.8	N/A
Female	92	27.9	2.0	N/A
Unknown	**488**	**18.0**	N/A	N/A
Male	302	17.0	N/A	N/A
Female	186	19.6	N/A	N/A
Total	**3,073**	**18.6**	**2.5**	**122.2**

Source: New Jersey Department of Health and Senior Services, 1997 New Jersey Hospital Discharge File (UB-92).

[1] ICD-9-CM Codes: Diabetes (250.0-250.9), Postsurgical hypoinsulinemia (251.3), Polyneuropathy in diabetes (357.2), Diabetic retinopathy (362.01-362.02), Diabetic cataract (366.41), Diabetes in pregnancy but not gestational (648.00-648.04), or Neonatal diabetes mellitus (775.1).

[2] ICD-9-CM Code: Lower limb amputation procedure (84.1) in the absence of Lower limb amputation codes ICD-9-CM 895-897.

[3] Number of days divided by number of hospital discharges.

[4] Synthetic estimates for 1994 from the 1999 report, *The Burden of Diabetes in New Jersey: A Surveillance Report*, were used for denominators.

[5] A Hispanic person may be of any race.

N/A: Not applicable or not available.

Table 15
Hospital Discharges with Any Mention of Diabetes[1] as a Listed Diagnosis and Non-Traumatic Amputations of the Lower Limb[2] by County, Number of Discharges, Average Length of Stay, and Age-Adjusted and Crude Rates, New Jersey, 1997

County	Number of Hospital Discharges	Average Length of Stay in Days[3]	Age-Adjusted Rate per 10,000 Standard Population	Crude Rate per 10,000 Diabetic Population[4]
Atlantic	96	15.7	2.9	123.5
Bergen	261	20.8	1.6	92.8
Burlington	140	15.3	2.5	119.4
Camden	207	15.8	3.0	134.4
Cape May	47	16.6	2.4	136.2
Cumberland	78	15.9	3.9	179.2
Essex	385	21.3	3.7	134.5
Gloucester	70	18.3	2.2	104.1
Hudson	222	24.9	2.9	128.8
Hunterdon	23	22.8	1.4	75.7
Mercer	145	18.8	3.0	134.9
Middlesex	255	20.3	2.6	125.8
Monmouth	195	16.4	2.2	110.6
Morris	112	16.3	1.8	89.9
Ocean	258	11.6	2.8	156.8
Passaic	185	22.8	2.8	129.7
Salem	25	9.8	2.3	115.7
Somerset	69	14.8	1.7	91.6
Sussex	48	20.2	2.9	145.6
Union	165	21.1	2.1	94.5
Warren	35	17.9	2.2	129.8
Unknown	52	16.4	N/A	N/A
Total	3,073	18.6	2.5	122.2

Source: New Jersey Department of Health and Senior Services, 1997 New Jersey Hospital Discharge File (UB-92).

[1] ICD-9-CM Codes: Diabetes (250.0-250.9), Postsurgical hypoinsulinemia (251.3), Polyneuropathy in diabetes (357.2), Diabetic retinopathy (362.01-362.02), Diabetic cataract (366.41), Diabetes in pregnancy but not gestational (648.00-648.04), or Neonatal diabetes mellitus (775.1).

[2] ICD-9-CM Code: Lower limb amputation procedure (84.1) in the absence of Lower limb amputation codes ICD-9-CM 895-897.

[3] Number of days divided by number of hospital discharges.

[4] Synthetic estimates for 1994 from the 1999 report, *The Burden of Diabetes in New Jersey: A Surveillance Report,* were used for denominators.

N/A: Not applicable or not available.

Table 16
Hospital Discharges with Any Mention of Diabetes[1] and Selected Cardiovascular Diseases as Listed Diagnoses by Race, Ethnicity, Gender, Number of Mentions, Mean Length of Stay, and Crude and Age-Adjusted Rates, New Jersey, 1997

Race, Ethnicity, and Gender	Selected Cardiovascular Diseases[2]											
	Hypertensive heart disease				Ischemic heart disease				Heart failure			
	Number of Mentions	Mean LOS[3]	Crude Rate per 10,000 Diabetic Population[4]	Age-Adjusted Rate per 10,000 Standard Population	Number of Mentions	Mean LOS[3]	Crude Rate per 10,000 Diabetic Population[4]	Age-Adjusted Rate per 10,000 Standard Population	Number of Mentions	Mean LOS[3]	Crude Rate per 10,000 Diabetic Population[4]	Age-Adjusted Rate per 10,000 Standard Population
Race and Gender												
White	5,469	8.2	288.0	4.5	47,438	6.4	2,497.8	43.7	27,023	9.1	1,422.8	22.3
Male	2,155	8.0	250.6	4.4	24,785	5.9	2,881.8	54.6	12,384	8.6	1,439.9	25.1
Female	3,314	8.3	318.9	4.5	22,653	7.0	2,179.9	34.5	14,639	9.4	1,408.7	19.9
Black	1,882	8.8	371.0	15.0	7,077	7.2	1,395.1	57.1	4,524	9.7	891.8	35.7
Male	661	7.7	287.7	13.0	2,890	6.9	1,258.1	56.9	1,771	9.3	770.9	34.5
Female	1,221	9.4	439.9	16.3	4,187	7.4	1,508.5	57.1	2,753	10.0	991.9	36.5
Other	349	7.5	323.7	8.8	2,676	6.3	2,481.8	67.9	1,504	8.8	1,394.9	38.0
Male	135	7.4	276.5	7.6	1,341	6.0	2,746.4	75.8	619	8.7	1,267.7	36.1
Female	214	7.6	362.7	9.6	1,335	6.6	2,262.9	61.1	885	8.9	1,500.1	39.2
Unknown	147	5.8	N/A	N/A	1,930	6.6	N/A	N/A	781	10.3	N/A	N/A
Male	71	4.9	N/A	N/A	1,068	6.2	N/A	N/A	402	9.8	N/A	N/A
Female	76	8.8	N/A	N/A	862	7.0	N/A	N/A	379	10.9	N/A	N/A
Hispanic Origin[5] and Gender												
Non-Hispanic	6,240	8.0	N/A	4.8	46,116	6.5	N/A	37.4	26,073	9.2	N/A	19.2
Male	2,425	7.6	N/A	4.6	23,739	6.0	N/A	45.9	11,737	9.0	N/A	21.2
Female	3,815	8.3	N/A	5.0	22,377	7.0	N/A	30.4	14,336	9.5	N/A	17.6
Hispanic	598	8.9	N/A	7.0	4,482	7.1	N/A	53.6	2,383	9.6	N/A	28.0
Male	212	9.0	N/A	5.9	2,063	6.7	N/A	56.8	957	9.0	N/A	26.4
Female	386	8.8	N/A	7.9	2,419	7.4	N/A	50.7	1,426	10.0	N/A	29.2
Unknown	1,009	9.2	N/A	N/A	8,523	6.5	N/A	N/A	5,376	9.0	N/A	N/A
Male	385	8.5	N/A	N/A	4,282	6.1	N/A	N/A	2,482	8.7	N/A	N/A
Female	624	9.6	N/A	N/A	4,241	6.8	N/A	N/A	2,894	9.3	N/A	N/A
Total	7,847	8.3	312.1	5.6	59,121	6.5	2,351.4	44.4	33,832	9.2	1,345.6	23.3

Source: New Jersey Department of Health and Senior Services, 1997 New Jersey Hospital Discharge File (UB-92).

[1] ICD-9-CM Codes: Diabetes (250.0-250.9), Postsurgical hypoinsulinemia (251.3), Polyneuropathy in diabetes (357.2), Diabetic retinopathy (362.01-362.02), Diabetic cataract (366.41), Diabetes in pregnancy but not gestational (648.00-648.04), or Neonatal diabetes mellitus (775.1).

[2] ICD-9-CM Codes for selected heart diseases: Hypertensive heart disease (ICD-9-CM Code 402), Ischemic heart disease (ICD-9-CM Codes 410 - 414) and Heart failure (ICD-9-CM Code 428).

[3] Number of days divided by number of hospital discharges.

[4] Synthetic estimates for 1994 from the 1999 report, *The Burden of Diabetes in New Jersey: A Surveillance Report*, were used for denominators.

[5] A Hispanic person can be of any race.

N/A: Not computed because of small numbers or population estimates were unavailable.

Table 17
Hospital Discharges with Any Mention of Diabetes[1] and Selected Cardiovascular Diseases as Listed Diagnoses by County, Crude and Age-Adjusted Rates, and Average Length of Stay, New Jersey, 1997

County	Selected Cardiovascular Diseases[2]								
	Hypertensive heart disease			Ischemic heart disease			Heart failure		
	Crude Rate per 10,000 Diabetic Population[3]	Age-Adjusted Rate/10,000 Standard Population	Average Length of Stay in Days[4]	Crude Rate per 10,000 Diabetic Population[3]	Age-Adjusted Rate/10,000 Standard Population	Average Length of Stay in Days[4]	Crude Rate per 10,000 Diabetic Population[3]	Age-Adjusted Rate/10,000 Standard Population	Average Length of Stay in Days[4]
Atlantic	355.2	6.7	8.7	2,405.1	47.9	6.7	1,294.6	24.4	9.3
Bergen	203.3	3.0	7.7	1,866.5	31.3	6.3	1,108.8	16.4	9.1
Burlington	172.3	3.2	6.3	2,127.9	42.6	5.6	1,313.4	24.9	7.7
Camden	250.0	4.9	6.8	2,410.9	48.9	6.4	1,536.9	28.6	8.9
Cape May	385.4	5.8	8.0	2,462.8	39.6	6.1	1,309.6	19.5	7.5
Cumberland	271.1	5.1	6.2	3,009.2	59.8	5.9	1,771.1	33.0	7.5
Essex	420.3	10.5	10.3	1,850.4	47.3	7.6	1,196.0	28.5	10.7
Gloucester	266.1	4.7	6.4	2,177.7	42.6	5.7	1,343.8	23.7	7.8
Hudson	406.2	7.9	9.8	2,959.6	59.4	8.0	1,687.0	32.2	11.2
Hunterdon	46.1	0.8	5.8	1,707.9	32.7	5.8	1,059.6	19.2	8.3
Mercer	414.2	7.7	6.6	2,653.4	54.1	5.5	1,371.8	26.0	7.9
Middlesex	390.2	7.2	9.1	2,755.8	52.3	6.9	1,416.4	24.7	10.1
Monmouth	265.4	4.5	8.2	2,407.1	44.5	6.5	1,299.7	21.8	8.8
Morris	179.0	3.1	7.8	1,685.0	31.1	6.0	952.1	16.0	9.0
Ocean	250.4	2.9	7.2	2,938.2	41.4	5.6	1,760.2	22.5	7.6
Passaic	221.5	4.0	8.4	2,216.7	43.3	6.8	1,389.0	25.0	10.1
Salem	245.3	4.5	4.9	2,568.7	50.3	5.3	1,319.1	23.8	6.6
Somerset	128.7	2.3	7.6	1,787.5	32.6	6.0	1,012.5	17.2	8.1
Sussex	160.8	2.8	6.1	2,205.8	44.3	6.0	1,265.2	22.7	8.6
Union	590.6	10.9	7.9	2,081.3	40.0	6.6	984.8	17.4	9.9
Warren	85.3	1.3	7.6	2,310.4	38.6	6.6	1,550.1	22.7	8.9
Total	312.1	5.6	8.3	2,351.4	44.4	6.5	1,345.6	23.3	9.2

Source: New Jersey Department of Health and Senior Services, 1997 New Jersey Hospital Discharge File (UB-92).

[1] ICD-9-CM Codes: Diabetes (250.0-250.9), Postsurgical hypoinsulinemia (251.3), Polyneuropathy in diabetes (357.2), Diabetic retinopathy (362.01-362.02), Diabetic cataract (366.41), Diabetes in pregnancy but not gestational (648.00-648.04), or Neonatal diabetes mellitus (775.1).

[2] ICD-9-CM Codes for selected heart diseases: Hypertensive heart disease (ICD-9-CM Code 402), Ischemic heart disease (ICD-9-CM Codes 410 -414) and Heart failure (ICD-9-CM Code 428).

[3] Synthetic estimates for 1994 from the 1999 report, *The Burden of Diabetes in New Jersey: A Surveillance Report*, were used for denominators.

[4] Number of days divided by number of hospital discharges.

Table 18
Hospital Discharges with Any Mention of Diabetes[1] and Hypertensive Disease[2]
Listed as Diagnoses by Race, Ethnicity, Gender, Average Length of Stay,
and Age-adjusted and Crude Rates, New Jersey, 1997

Race, Ethnicity, and Gender	Number of Hospital Discharges	Average Length of Stay in Days[3]	Age-Adjusted Rate Per 10,000 Standard Population	Crude Rate Per 10,000 Diabetic Population[4]
Race and Gender				
White	**61,166**	**6.4**	**59.3**	**3,220.6**
Male	27,580	6.1	63.2	3,206.8
Female	33,586	6.6	55.8	3,232.0
Black	**17,734**	**7.3**	**145.0**	**3,495.9**
Male	6,813	7.3	133.5	2,965.8
Female	10,921	7.3	153.0	3,934.7
Other	**4,131**	**6.4**	**104.1**	**3,831.3**
Male	1,757	6.4	97.5	3,598.4
Female	2,374	6.4	108.9	4,024.0
Unknown	**2,010**	**6.6**	N/A	N/A
Male	968	6.6	N/A	N/A
Female	1,042	6.5	N/A	N/A
Hispanic Origin[5] and Gender				
Non-Hispanic	**65,294**	**6.5**	**56.1**	N/A
Male	28,767	6.2	57.9	N/A
Female	36,527	6.7	54.5	N/A
Hispanic	**7,591**	**7.2**	**90.6**	N/A
Male	3,083	7.0	83.2	N/A
Female	4,508	7.3	96.4	N/A
Unknown	**12,156**	**6.7**	**N/A**	**N/A**
Male	5,268	6.6	N/A	N/A
Female	6,888	6.8	N/A	N/A
Total	**85,041**	**6.6**	**67.6**	**3,382.3**

Source: New Jersey Department of Health and Senior Services, 1997 New Jersey Hospital Discharge File (UB-92).

[1] ICD-9-CM Codes: Diabetes (250.0-250.9), Postsurgical hypoinsulinemia (251.3), Polyneuropathy in diabetes (357.2), Diabetic retinopathy (362.01-362.02), Diabetic cataract (366.41), Diabetes in pregnancy but not gestational (648.00-648.04), or Neonatal diabetes mellitus (775.1).

[2] ICD-9-CM Codes: hypertensive disease (401 - 405).

[3] Number of days divided by number of hospital discharges.

[4] Synthetic estimates for 1994 from the 1999 report, *The Burden of Diabetes in New Jersey: A Surveillance Report,* were used for denominators.

[5] A Hispanic person can be of any race.

N/A: Not computed because of small numbers or population estimates were unavailable.

Table 19
Hospital Discharges with Any Mention of Diabetes[1] and Hypertensive Disease[2] Listed as Diagnoses by County, Number of Discharges, Average Length of Stay, and Age-adjusted and Crude Rates, New Jersey, 1997

County	Number of Hospital Discharges	Average Length of Stay in Days[3]	Age-Adjusted Rate Per 10,000 Standard Population	Crude Rate/10,000 Diabetic Population[4]
Atlantic	2,670	6.7	74.7	3,435.9
Bergen	7,038	6.2	43.7	2,501.2
Burlington	3,556	5.4	63.3	3,032.7
Camden	5,609	6.1	77.6	3,642.0
Cape May	1,098	6.2	55.3	3,181.3
Cumberland	1,752	5.6	84.6	4,024.5
Essex	10,650	8.0	102.4	3,721.0
Gloucester	2,020	5.5	60.0	3,002.7
Hudson	7,380	8.2	91.8	4,282.8
Hunterdon	653	5.3	40.7	2,148.8
Mercer	4,397	5.7	88.2	4,092.2
Middlesex	7,124	6.8	69.3	3,514.5
Monmouth	5,816	6.2	63.5	3,297.9
Morris	2,930	6.0	44.3	2,352.2
Ocean	5,603	5.4	52.4	3,405.6
Passaic	5,096	6.6	75.0	3,571.3
Salem	757	5.3	70.4	3,503.6
Somerset	1,639	5.9	40.7	2,175.0
Sussex	940	5.8	57.9	2,852.0
Union	5,655	7.0	66.9	3,239.7
Warren	826	7.2	51.5	3,063.2
Unknown	1,832	5.4	N/A	N/A
Total	**85,041**	**6.6**	**67.6**	**3,382.3**

Source: New Jersey Department of Health and Senior Services, 1997 New Jersey Hospital Discharge File (UB-92).

[1] ICD-9-CM Codes: Diabetes (250.0-250.9), Postsurgical hypoinsulinemia (251.3), Polyneuropathy in diabetes (357.2), Diabetic retinopathy (362.01-362.02), Diabetic cataract (366.41), Diabetes in pregnancy but not gestational (648.00-648.04), or Neonatal diabetes mellitus (775.1).

[2]ICD-9-CM Codes: hypertensive disease (401 - 405).

[3]Number of days divided by number of hospital discharges.

[4]Synthetic estimates for 1994 from the 1999 report, *The Burden of Diabetes in New Jersey: A Surveillance Report,* were used for denominators.

N/A: Not applicable or not available.

Table 20
Hospital Discharges with Any Mention of Diabetes[1] and Major Cardiovascular[2] Diseases Listed as Diagnoses by Race, Ethnicity, Gender, Average Length of Stay, and Age-adjusted and Crude Rates, New Jersey, 1997

Race, Ethnicity, and Gender	Number of Discharges	Average Length of Stay in Days[3]	Age-adjusted Rate per 10,000 Standard Population	Crude Rate per 10,000 Diabetic Population[4]
Race				
White	**95,439**	**7.1**	**89.6**	**5,025.2**
Male	45,761	6.7	101.6	5,320.7
Female	49,678	7.5	79.5	4,780.6
Black	**21,866**	**8.0**	**177.2**	**4,310.5**
Male	8,631	7.9	168.5	3,757.2
Female	13,235	8.0	183.3	4,768.4
Other	**6,026**	**7.0**	**151.8**	**5,588.8**
Male	2,689	6.7	150.7	5,507.2
Female	3,337	7.3	152.0	5,656.3
Unknown	**3,052**	**7.2**	N/A	N/A
Male	1,614	7.1	N/A	N/A
Female	1,438	7.5	N/A	N/A
Hispanic Origin[5] and Gender				
Non-Hispanic	**97,801**	**7.2**	**81.3**	N/A
Male	45,823	6.8	89.6	N/A
Female	51,978	7.5	74.5	N/A
Hispanic	**10,209**	**7.7**	**121.2**	N/A
Male	4,337	7.5	117.3	N/A
Female	5,872	7.9	124.3	N/A
Unknown	**18,373**	**7.4**	N/A	N/A
Male	8,535	7.2	N/A	N/A
Female	9,838	7.7	N/A	N/A
Total	**126,383**	**7.3**	**99.4**	**5,026.5**

Source: New Jersey Department of Health and Senior Services, 1997 New Jersey Hospital Discharge File (UB-92).

[1] ICD-9-CM Codes: Diabetes (250.0-250.9), Postsurgical hypoinsulinemia (251.3), Polyneuropathy in diabetes (357.2), Diabetic retinopathy (362.01-362.02), Diabetic cataract (366.41), Diabetes in pregnancy but not gestational (648.00-648.04), or Neonatal diabetes mellitus (775.1).

[2]ICD-9-CM Codes: Major Cardiovascular Diseases (390-448).

[3]Number of days divided by number of hospital discharges.

[4] Synthetic estimates for 1994 from the 1999 report, *The Burden of Diabetes in New Jersey: A Surveillance Report*, were used for denominators.

[5] A Hispanic person can be of any race.

N/A: Not computed because of small numbers or population estimates were unavailable.

Table 21
Hospital Discharges with Any Mention of Diabetes[1] and Major Cardiovascular Diseases[2] Listed as Diagnoses by County, Number of Discharges, Average Length of Stay, and Age-adjusted and Crude Rates, New Jersey, 1997

County	Number of Discharges	Average Length of Stay in Days[3]	Age-Adjusted Rate per 10,000 Standard Population	Crude Rate/10,000 Diabetic Population[4]
Atlantic	3,965	7.3	107.2	5,102.4
Bergen	10,935	7.0	65.9	3,886.1
Burlington	5,474	6.2	94.5	4,668.5
Camden	8,298	6.9	110.9	5,388.0
Cape May	1,788	6.7	85.2	5,180.5
Cumberland	2,647	6.2	123.3	6,080.4
Essex	14,419	8.7	134.1	5,037.9
Gloucester	3,117	6.3	89.9	4,633.3
Hudson	10,657	9.1	128.5	6,184.5
Hunterdon	1,051	6.5	65.3	3,458.5
Mercer	6,049	6.4	117.9	5,629.7
Middlesex	10,691	7.5	101.9	5,274.3
Monmouth	8,687	6.9	92.9	4,925.9
Morris	4,487	6.7	66.9	3,602.1
Ocean	9,109	6.1	81.9	5,536.6
Passaic	7,490	7.5	106.5	5,249.1
Salem	1,142	5.8	104.2	5,285.5
Somerset	2,609	6.3	63.3	3,462.2
Sussex	1,550	6.6	92.5	4,702.8
Union	8,032	7.6	92.4	4,601.4
Warren	1,352	7.6	83.8	5,013.8
Unknown	2,834	6.1	N/A	N/A
Total	**126,383**	**7.3**	**99.4**	**5,026.5**

Source: New Jersey Department of Health and Senior Services, 1997 New Jersey Hospital Discharge File (UB-92).

[1] ICD-9-CM Codes: Diabetes (250.0-250.9), Postsurgical hypoinsulinemia (251.3), Polyneuropathy in diabetes (357.2), Diabetic retinopathy (362.01-362.02), Diabetic cataract (366.41), Diabetes in pregnancy but not gestational (648.00-648.04), or Neonatal diabetes mellitus (775.1).

[2]ICD-9-CM Codes: Major Cardiovascular Diseases (390-448).

[3]Number of days divided by number of hospital discharges.

[4]Synthetic estimates for 1994 from the 1999 report, *The Burden of Diabetes in New Jersey: A Surveillance Report*, were used for denominators.

N/A: Not applicable.

Table 22
Hospital Discharges with Any Mention of Diabetes[1] and Cerebrovascular Disease[2] Listed as Diagnoses by Race, Hispanic Ethnicity, Gender, Average Length of Stay, and Age-Adjusted and Crude Rates, New Jersey, 1997

Race, Ethnicity, and Gender	Number of Hospital Discharges	Average Length of Stay in Days[3]	Age-Adjusted Rate/10,000 Standard Population	Crude Rate/10,000 Diabetic Population[4]
Race and Gender				
White	**11,983**	**8.8**	**10.0**	**630.9**
Male	5,702	8.5	11.6	663.0
Female	6,281	9.0	8.6	604.4
Black	**2,911**	**10.3**	**23.0**	**573.9**
Male	1,110	10.3	21.6	483.2
Female	1,801	10.2	23.8	648.9
Other	**814**	**9.2**	**20.8**	**754.9**
Male	385	8.4	22.3	788.5
Female	429	10.0	19.5	727.2
Unknown	**307**	**9.2**	N/A	N/A
Male	160	7.9	N/A	N/A
Female	147	10.7	N/A	N/A
Hispanic Origin[5] and Gender				
Non-Hispanic	**12,431**	**9.0**	**9.4**	N/A
Male	5,738	8.8	10.5	N/A
Female	6,693	9.2	8.5	N/A
Hispanic	**1,188**	**10.6**	**14.0**	**N/A**
Male	514	9.9	14.2	N/A
Female	674	11.2	13.8	N/A
Unknown	**2,396**	**8.6**	N/A	N/A
Male	1,105	8.3	N/A	N/A
Female	1,291	8.9	N/A	N/A
Total	**16,015**	**9.1**	**11.0**	**637.0**

Source: New Jersey Department of Health and Senior Services, 1997 New Jersey Hospital Discharge File (UB-92).

[1] ICD-9-CM Codes: Diabetes (250.0-250.9), Postsurgical hypoinsulinemia (251.3), Polyneuropathy in diabetes (357.2), Diabetic retinopathy (362.01-362.02), Diabetic cataract (366.41), Diabetes in pregnancy but not gestational (648.00-648.04), or Neonatal diabetes mellitus (775.1).

[2] ICD-9-CM Codes: Cerebrovascular Disease (Stroke: 430 - 438).

[3] Number of days divided by number of hospital discharges.

[4] Synthetic estimates for 1994 from the 1999 report, *The Burden of Diabetes in New Jersey: A Surveillance Report*, were used for denominators.

[5] A Hispanic person can be of any race.

N/A: Not applicable or not available.

Table 23
Hospital Discharges with Any Mention of Diabetes[1] and Cerebrovascular Disease[2] Listed as Diagnoses by County, Number of Discharges, Average Length of Stay, and Age-adjusted and Crude Rates, New Jersey, 1997

County	Number of Hospital Discharges	Average Length of Stay in Days[3]	Age-Adjusted Rate Per 10,000 Standard Population	Crude Rate/10,000 Diabetic Population[4]
Atlantic	477	9.3	11.8	613.8
Bergen	1,367	9.0	7.4	485.8
Burlington	610	7.7	9.8	520.2
Camden	1,095	7.9	14.1	711.0
Cape May	257	7.3	10.0	744.6
Cumberland	317	7.4	13.7	728.2
Essex	1,803	11.3	15.5	630.0
Gloucester	431	7.1	11.5	640.7
Hudson	1,398	12.1	15.9	811.3
Hunterdon	123	7.6	7.0	404.8
Mercer	810	8.3	14.0	753.9
Middlesex	1,309	10.0	11.5	645.8
Monmouth	1,158	8.2	11.4	656.6
Morris	561	8.3	7.9	450.4
Ocean	1,198	7.0	8.9	728.2
Passaic	897	9.5	11.7	628.6
Salem	184	7.2	14.4	851.6
Somerset	286	8.0	6.6	379.5
Sussex	196	7.3	10.5	594.7
Union	1,026	9.6	10.5	587.8
Warren	180	9.1	9.9	667.5
Unknown	332	7.4	N/A	N/A
Total	**16,015**	**9.1**	**11.0**	**637.0**

Source: New Jersey Department of Health and Senior Services, 1997 New Jersey Hospital Discharge File (UB-92).

[1] ICD-9-CM Codes: Diabetes (250.0-250.9), Postsurgical hypoinsulinemia (251.3), Polyneuropathy in diabetes (357.2), Diabetic retinopathy (362.01-362.02), Diabetic cataract (366.41), Diabetes in pregnancy but not gestational (648.00-648.04), or Neonatal diabetes mellitus (775.1).

[2]ICD-9-CM Codes: Cerebrovascular Disease (Stroke: 430 - 438).

[3]Number of days divided by number of hospital discharges.

[4]Synthetic estimates for 1994 from the 1999 report, *The Burden of Diabetes in New Jersey: A Surveillance Report*, were used for denominators.

N/A: Not applicable or not available.

Table 24
Hospital Discharges with Any Mention of Diabetes[1] and Pneumonia or Influenza [2] Listed as Diagnoses by Race, Ethnicity, Gender, Average Length of Stay, and Age-adjusted and Crude Rates, New Jersey, 1997

Race, Ethnicity, and Gender	Number of Hospital Discharges	Average Length of Stay in Days[3]	Age-adjusted Rate Per 10,000 Standard Population	Crude Rate/10,000 Diabetic Population[4]
Race and Gender				
White	**7,047**	**12.4**	**5.9**	**371.0**
Male	3,414	12.2	6.9	396.9
Female	3,633	12.7	5.2	349.6
Black	**1,526**	**13.9**	**11.9**	**300.8**
Male	636	13.0	12.2	276.9
Female	890	14.6	11.8	320.7
Other	**425**	**13.0**	**10.6**	**394.2**
Male	183	13.5	10.3	374.8
Female	242	12.7	10.8	410.2
Unknown	**205**	**14.8**	N/A	N/A
Male	115	14.0	N/A	N/A
Female	90	15.8	N/A	N/A
Hispanic Origin[5] and Gender				
Non-Hispanic	**6,927**	**12.7**	**5.2**	N/A
Male	3,292	12.2	5.9	N/A
Female	3,635	13.2	4.6	N/A
Hispanic	**798**	**14.0**	**9.3**	N/A
Male	337	15.9	9.0	N/A
Female	461	12.7	9.5	N/A
Unknown	**1,478**	**12.3**	N/A	N/A
Male	719	11.9	N/A	N/A
Female	759	12.7	N/A	N/A
Total	**9,203**	**12.8**	**6.5**	**366.0**

Source: New Jersey Department of Health and Senior Services, 1997 New Jersey Hospital Discharge File (UB-92).

[1] ICD-9-CM Codes: Diabetes (250.0-250.9), Postsurgical hypoinsulinemia (251.3), Polyneuropathy in diabetes (357.2), Diabetic retinopathy (362.01-362.02), Diabetic cataract (366.41), Diabetes in pregnancy but not gestational (648.00-648.04), or Neonatal diabetes mellitus (775.1).

[2] ICD-9-CM Codes: Pneumonia and Influenza (480.0-487.8).

[3] Number of days divided by number of hospital discharges.

[4] Synthetic estimates for 1994 from the 1999 report, *The Burden of Diabetes in New Jersey: A Surveillance Report,* were used for denominators.

[5] A Hispanic person can be of any race.

N/A: Not applicable or not available.

Table 25
Hospital Discharges with Any Mention of Diabetes[1] and Pneumonia or Influenza [2]
Listed as Diagnoses by County, Average Length of Stay and
Age-adjusted and Crude Rates, New Jersey, 1997

County	Number of Discharges	Average Length of Stay in Days[3]	Age-Adjusted Rate Per 10,000 Standard Population	Crude Rate/10,000 Diabetic Population[4]
Atlantic	303	12.5	7.3	389.9
Bergen	747	12.2	4.0	265.5
Burlington	410	9.6	6.4	349.7
Camden	590	9.7	7.1	383.1
Cape May	195	8.8	7.8	565.0
Cumberland	180	10.9	7.8	413.5
Essex	1,120	15.3	9.9	391.3
Gloucester	185	10.6	4.7	275.0
Hudson	811	17.2	9.0	470.6
Hunterdon	87	12.8	5.2	286.3
Mercer	395	12.7	7.0	367.6
Middlesex	792	14.1	7.0	390.7
Monmouth	586	12.7	5.7	332.3
Morris	330	12.8	4.5	264.9
Ocean	590	10.5	4.7	358.6
Passaic	587	12.2	8.0	411.4
Salem	82	8.2	6.9	379.5
Somerset	214	9.8	4.9	284.0
Sussex	151	9.5	7.8	458.1
Union	585	14.5	6.1	335.1
Warren	100	12.5	5.5	370.8
Unknown	163	12.9	N/A	N/A
Total	**9,203**	**12.8**	**6.5**	**366.0**

Source: New Jersey Department of Health and Senior Services, 1997 New Jersey Hospital Discharge File (UB-92).

[1] ICD-9-CM Codes: Diabetes (250.0-250.9), Postsurgical hypoinsulinemia (251.3), Polyneuropathy in diabetes (357.2), Diabetic retinopathy (362.01-362.02), Diabetic cataract (366.41), Diabetes in pregnancy but not gestational (648.00-648.04), or Neonatal diabetes mellitus (775.1).

[2]ICD-9-CM Codes: Pneumonia and Influenza (480.0-487.8).

[3]Number of days divided by number of hospital discharges.

[4]Synthetic estimates for 1994 from the 1999 report, *The Burden of Diabetes in New Jersey: A Surveillance Report*, were used for denominators.

N/A: Not applicable or not available.

Table 26
Hospital Discharges with Any Mention and No Mention of Diabetes as a Listed Diagnosis (1st through 9th diagnosis) by Primary Diagnosis and Average Length of Stay, Children 18 Years Old and Under, New Jersey, 1997

Primary Diagnosis	Any Mention of Diabetes[1]		No mention of Diabetes		Total Number of Discharges 18 & Under
	Average Length of Stay in Days	Number of Discharges	Average Length of Stay in Days	Number of Discharges	
Infectious & parasitic diseases (001-139)	4.4	18	3.5	6,444	6,462
Malignant neoplasms (140-208)	N/A	N/A	9.1	576	578
Other neoplasms (210-239)	N/A	N/A	0.8	1,377	1,378
Disorders of thyroid gland (240-246)	N/A	N/A	2.3	28	28
Diabetes Mellitus (250.0-250.9)	***3.4***	***700***	**N/A**	**N/A**	***700***
DM without mention of complication (250.0)	3.6	218	N/A	N/A	218
DM with ketoacidosis (250.1)	3.3	398	N/A	N/A	398
DM with hyperosmolarity (250.2)	N/A	N/A	N/A	N/A	N/A
DM with other coma (250.3)	3.4	5	N/A	N/A	5
DM with renal manifestations (250.4)	N/A	N/A	N/A	N/A	N/A
DM with ophthalmic manifestations (250.5)	N/A	N/A	N/A	N/A	N/A
DM with neurological manifestations (250.6)	2.0	10	N/A	N/A	10
DM with other specified manifestations (250.8)	2.3	48	N/A	N/A	48
DM with unspecified complication (250.9)	4.4	14	N/A	N/A	14
Other endocrine, nutritional, & metabolic disorder (251-279)	N/A	N/A	2.8	3,219	3,219
Diseases of the blood & blood forming organs (280-289)	N/A	N/A	4.1	1,856	1,856
Mental disorders (290-319)	8.8	25	9.7	4,379	4,404
Diseases of the nervous system & sense organs (320-389)	2.5	6	0.9	9,456	9,462
Acute rheumatic fever (390-392)	N/A	N/A	4.1	10	10
Chronic rheumatic heart disease (393-398)	N/A	N/A	6.2	6	6
Hypertensive disease (401-405)	N/A	N/A	5.2	62	64
Ischemic heart disease (410-414)	N/A	N/A	3.7	11	13
Diseases of pulmonary circulation (415-417)	N/A	N/A	4.1	7	7
Other forms of heart disease (420-429)	N/A	N/A	4.5	290	294
Cerebrovascular disease (430-438)	N/A	N/A	5.9	58	58
Arteries, arterioles and capillaries diseases (440-448)	N/A	N/A	3.8	160	160
Veins, lymphatic & other circulatory diseases (451-459)	N/A	N/A	1.1	228	229
Diseases of the respiratory system (460-519)	2.9	26	2.4	26,308	26,334
Diseases of the digestive system (520-579)	2.5	43	2.0	12,630	12,673
Nephritis, nephrotic syndrome and nephrosis (580-589)	N/A	N/A	4.9	188	189
Other diseases of the genitourinary system (590-629)	2.7	14	1.4	5,706	5,720
Complications in pregnancy, childbirth & peurperium (630-677)	3.2	40	2.3	8,217	8,257
Diseases of the skin and subcutaneous tissue (680-709)	3.9	10	2.1	2,258	2,268
Musculoskeletal & connective tissue diseases (710-739)	1.5	8	1.3	3,585	3,593
Congenital anomalies (740-759)	N/A	N/A	2.5	4,157	4,159
Conditions of the perinatal period (760-779)	N/A	N/A	8.6	2,778	2,782
Symptoms, signs & ill-defined conditions (780-799)	1.4	10	2.5	4,908	4,918
Injury and poisoning (800-999)	3.9	32	2.4	12,206	12,238
Factors influencing health status/contact with health services (V01-V82)	19.8	32	3.7	111,630	111,662
Total	**4.1**	**1,002**	**3.2**	**222,738**	**223,740**

Source: New Jersey Department of Health and Senior Services, 1997 New Jersey Hospital Discharge File (UB-92).

[1] ICD-9-CM Codes: Diabetes (250.0-250.9), Postsurgical hypoinsulinemia (251.3), Polyneuropathy in diabetes (357.2), Diabetic retinopathy (362.01-362.02), Diabetic cataract (366.41), Diabetes in pregnancy but not gestational (648.00-648.04), or Neonatal diabetes mellitus (775.1).

N/A: Not applicable or very small numbers.

Table 27
Hospital Discharges with Any Mention of Diabetes by Specific Condition Listed as a Diagnosis, by Gender, Race, Ethnicity, Number of Discharges, and Average Length of Stay, New Jersey, 1997

Race, Ethnicity, and Gender	DM without mention of complication (250.0)		DM with ketoacidosis (250.1)		DM with hyperosmolarity (250.2)		DM with other coma (250.3)		DM with renal manifestations (250.4)	
	Number of Mentions	Average Length of Stay in Days[1]	Number of Mentions	Average Length of Stay in Days[1]	Number of Mentions	Average Length of Stay in Days[1]	Number of Mentions	Average Length of Stay in Days[1]	Number of Mentions	Average Length of Stay in Days[1]
Race and Gender										
White	**90,712**	**6.1**	**1,923**	**6.9**	**553**	**11.1**	**190**	**10.6**	**7,616**	**9.6**
Male	42,621	5.7	835	6.4	250	10.1	79	10.6	3,968	9.0
Female	48,091	6.4	1,088	7.2	303	11.9	111	10.5	3,648	10.4
Black	**19,555**	**6.8**	**1,065**	**7.3**	**305**	**10.1**	**81**	**13.1**	**3,080**	**9.8**
Male	7,540	6.6	572	7.2	153	8.9	30	13.4	1,350	9.5
Female	12,015	6.9	493	7.5	152	11.4	51	13.0	1,730	10.1
Other	**6,259**	**5.9**	**176**	**6.5**	**31**	**12.4**	**14**	**7.2**	**574**	**9.3**
Male	2,786	5.7	82	6.0	14	13.9	6	9.2	262	9.1
Female	3,473	6.1	94	6.9	17	11.1	8	5.8	312	9.5
Unknown	**3,048**	**6.2**	**73**	**6.2**	**12**	**7.2**	**5**	**10.4**	**228**	**11.0**
Male	1,579	6.1	43	5.9	7	7.0	3	14.7	114	10.6
Female	1,469	6.3	30	6.6	5	7.4	2	4.0	114	11.4
Hispanic Origin[2] and Gender										
Non-Hispanic	**91,668**	**6.1**	**2,390**	**7.0**	**644**	**10.7**	**218**	**11.4**	**8,772**	**9.7**
Male	42,255	5.8	1,145	6.7	303	9.8	90	11.2	4,391	9.1
Female	49,413	6.5	1,245	7.4	341	11.6	128	11.5	4,381	10.3
Hispanic	**10,425**	**6.5**	**375**	**6.5**	**105**	**8.7**	**33**	**6.4**	**1,143**	**9.7**
Male	4,298	6.3	177	6.1	53	7.1	11	5.8	502	9.4
Female	6,127	6.6	198	6.8	52	10.4	22	6.7	641	10.0
Unknown	**17,481**	**6.3**	**472**	**7.2**	**152**	**12.4**	**39**	**13.5**	**1,583**	**9.8**
Male	7,973	6.0	210	7.1	68	11.7	17	15.4	801	9.3
Female	9,508	6.6	262	7.3	84	13.1	22	12.1	782	10.3
Total	**116,526**	**6.2**	**3,164**	**7.0**	**889**	**10.8**	**285**	**11.1**	**11,270**	**9.7**

Source: New Jersey Department of Health and Senior Services, 1997 New Jersey Hospital Discharge File (UB- 92).

[1]Number of days divided by number of hospital discharges.

[2] A Hispanic person can be of any race.

Table 27 (Continued)
Hospital Discharges with Any Mention of Diabetes by Specific Condition Listed as a Diagnosis, by Gender, Race, Ethnicity, Number of Discharges, and Average Length of Stay, New Jersey, 1997

Race, Ethnicity, and Gender	DM with ophthalmic manifestations (250.5)		DM with neurological manifestations (250.6)		DM with peripheral circulatory disorders (250.7)		DM with other specified manifestations (250.8)		DM with unspecified complication (250.9)	
	Number of Mentions	Average Length of Stay in Days[1]	Number of Mentions	Average Length of Stay in Days[1]	Number of Mentions	Average Length of Stay in Days[1]	Number of Mentions	Average Length of Stay in Days[1]	Number of Mentions	Average Length of Stay in Days[1]
Race and Gender										
White	**4,221**	**6.8**	**8,173**	**8.8**	**5,539**	**12.2**	**6,595**	**10.3**	**1,161**	**9.9**
Male	1,982	6.3	4,130	8.6	3,227	11.7	3,379	10.1	511	9.6
Female	2,239	7.3	4,043	9.0	2,312	12.8	3,216	10.6	650	10.2
Black	**1,127**	**7.1**	**1,783**	**9.8**	**1,290**	**14.6**	**1,934**	**11.4**	**234**	**9.8**
Male	471	6.9	769	9.3	616	14.2	918	10.8	87	8.1
Female	656	7.3	1,014	10.1	674	14.8	1,016	11.9	147	10.9
Other	**322**	**6.6**	**398**	**8.7**	**271**	**13.7**	**343**	**9.9**	**274**	**8.7**
Male	160	6.6	199	8.7	145	13.4	176	10.1	102	7.9
Female	162	6.6	199	8.7	126	14.2	167	9.7	172	9.2
Unknown	**119**	**8.2**	**151**	**9.6**	**157**	**13.3**	**119**	**10.8**	**34**	**10.0**
Male	56	8.5	83	8.5	97	14.0	69	11.6	11	8.5
Female	63	7.9	68	11.0	60	12.2	50	9.7	23	10.7
Hispanic Origin[2] and Gender										
Non-Hispanic	**4,450**	**6.9**	**8,291**	**9.0**	**5,604**	**12.3**	**6,953**	**10.5**	**1,150**	**10.0**
Male	2,097	6.4	4,123	8.7	3,173	11.8	3,530	10.1	483	9.4
Female	2,353	7.3	4,168	9.3	2,431	12.9	3,423	10.9	667	10.4
Hispanic	**453**	**7.5**	**687**	**8.9**	**570**	**15.0**	**708**	**10.9**	**200**	**11.4**
Male	198	7.3	315	9.1	308	14.4	348	12.0	92	10.3
Female	255	7.7	372	8.7	262	15.8	360	9.8	108	12.3
Unknown	**886**	**6.8**	**1,527**	**9.0**	**1,083**	**13.3**	**1,330**	**10.6**	**353**	**8.1**
Male	374	6.4	743	8.9	604	13.2	664	10.2	136	7.4
Female	512	7.1	784	9.0	479	13.6	666	10.9	217	8.5
Total	**5,670**	**6.9**	**10,354**	**8.9**	**7,100**	**12.7**	**8,872**	**10.5**	**1,669**	**9.7**

Source: New Jersey Department of Health and Senior Services, 1997 New Jersey Hospital Discharge File (UB-92).

[1]Number of days divided by number of hospital discharges.

[2] A Hispanic person can be of any race.

Table 28
Hospital Discharges Under 65 Years of Age with Selected Ambulatory Care Sensitive (ACS) Diabetes Conditions Listed as the Primary Diagnosis by Race, Gender, Hispanic Ethnicity, and Percentage, New Jersey, 1997

Race, Ethnicity, and Gender	Discharges with Diabetes Listed as Primary Diagnosis [1]	Number of Hospital Discharges with Selected Diabetes Conditions			% Selected (ACS) Conditions[5]
		DM (250.1) [2]	DM (250.2) [3]	DM (250.3) [4]	
Race and Gender					
White	**5,365**	**1,202**	**126**	**58**	**25.8%**
Male	3,006	539	84	28	21.7%
Female	2,359	663	42	30	31.2%
Black	**2,981**	**816**	**152**	**38**	**33.7%**
Male	1,598	461	94	13	35.5%
Female	1,383	355	58	25	31.7%
Other	**564**	**132**	**8**	**4**	**25.5%**
Male	320	68	4	3	23.4%
Female	244	64	4	1	28.3%
Unknown	**186**	**53**	**4**	**0**	**30.6%**
Male	110	31	4	0	31.8%
Female	76	22	0	0	28.9%
Hispanic Origin[6] and Gender					
Non-Hispanic	**6,584**	**1,611**	**193**	**77**	**28.6%**
Male	3,681	819	124	33	26.5%
Female	2,903	792	69	44	31.2%
Hispanic	**1,222**	**284**	**50**	**13**	**28.4%**
Male	655	138	30	6	26.6%
Female	567	146	20	7	30.5%
Unknown	**1,290**	**308**	**47**	**10**	**28.3%**
Male	698	142	32	5	25.6%
Female	592	166	15	5	31.4%
Total	**9,096**	**2,203**	**290**	**100**	**28.5%**

Source: 1997 New Jersey Department of Health and Senior Services, New Jersey Hospital Discharge File (UB-92).

[1]ICD-9-CM Codes: Diabetes (250.0-250.9).

[2]DM with ketoacidosis (250.1).

[3]DM with hyperosmolarity (250.2).

[4]DM with other coma (250.3).

[5] Percentage of selected ACS conditions of the total discharges with diabetes listed as primary diagnosis (ICD-9-CM 250.0-250.9).

[6] A Hispanic person can be of any race.

Table 29
Hospital Discharges Under 65 Years of Age with Selected Ambulatory Care Sensitive (ACS) Diabetes Conditions Listed As the Primary Diagnosis by County and Percentage, New Jersey, 1997

County	Total Discharges with Diabetes as Primary Diagnosis	Selected ACS Diabetes Conditions			Percentage of Selected ACS Diabetes Conditions[4]
		DM (250.1)[1]	DM (250.2)[2]	DM (250.3)[3]	
		Discharges	Discharges	Discharges	
Atlantic	256	63	9	0	28.1%
Bergen	482	99	6	7	23.2%
Burlington	349	89	15	6	31.5%
Camden	597	180	34	12	37.9%
Cape May	123	27	5	3	28.5%
Cumberland	174	53	6	3	35.6%
Essex	1,614	392	67	20	29.7%
Gloucester	236	60	7	3	29.7%
Hudson	980	185	19	8	21.6%
Hunterdon	55	9	0	0	16.4%
Mercer	464	140	16	8	35.3%
Middlesex	750	163	28	7	26.4%
Monmouth	590	143	23	4	28.8%
Morris	219	58	1	3	28.3%
Ocean	362	86	4	4	26.0%
Passaic	653	147	18	4	25.9%
Salem	51	15	0	0	29.4%
Somerset	206	41	7	0	23.3%
Sussex	115	35	3	2	34.8%
Union	577	155	16	5	30.5%
Warren	91	15	1	0	17.6%
Unknown	152	48	5	1	35.5%
Total	**9,096**	**2,203**	**290**	**100**	**28.5%**

Source: 1997 New Jersey Department of Health and Senior Services, New Jersey Hospital Discharge File (UB-92).

[1]DM with ketoacidosis (250.1).

[2]DM with hyperosmolarity (250.2).

[3]DM with other coma (250.3).

[4]ICD-9-CM Codes: Diabetes (250.0-250.9).

Technical Notes

Data from the 1997 New Jersey Hospital Discharge File (UB-92) were used to produce this report. A subset from the original file was obtained from the Division of Health Care Systems Analysis of the New Jersey Department of Health and Senior Services. Personal identifiers were stripped from the subset to protect patient confidentiality.

National data were obtained from the 1997 National Hospital Discharge Survey (NHDS) Summary Report.[1] The NHDS is a national probability survey designed to gather information on characteristics of inpatients discharged from non-federal short-stay hospitals in the United States. This survey, conducted annually since 1965, collects data from a sample of approximately 270,000 inpatient records from a national sample of about 500 hospitals. The NHDS uses a universe of hospitals with an average length of stay of less than 30 days for all patients per hospital, general hospital, or children's general hospital. Excluded from this sample are newborns (same birth and admission date); federal, military, and Department of Veterans Affairs hospitals; hospital units of institutions (such as prison hospitals); and hospitals with fewer than six beds staffed for patient use.

Two different methods were used to calculate hospital discharge rates. In the first method, rates were calculated by using estimates of the resident population of New Jersey as the denominator. These rates were age-adjusted to the 1940 U.S. standard population using the direct method of age-adjustment. In the second method of rate calculation, rates were calculated for any mention of diabetes and other conditions by using synthetic estimates[6] of the number of persons with diabetes as the denominator. The two rates provide different views of the impact of diabetes hospitalizations in New Jersey. Rates with the New Jersey population as the denominator are useful in describing hospital discharges for diabetes and diabetes-related complications in the whole population. For instance, these rates are used to rank diabetes as a primary cause of hospitalization in comparison to other primary causes. Additionally, calculation of rates of any mention of diabetes and its complications allow for comparisons of the impact of diabetes and its complications on population subgroups.

The use, in the denominator, of synthetic estimates of the number of people with diabetes allows for the calculation of diabetes-related hospitalization rates that relate to the population of diabetics rather than to the population at large. By adjusting for the hospital discharges with any mention of diabetes, these rates can be used to compare the risk of complications among subgroups of persons with diabetes. For example, these rates are used to describe demographic characteristics of persons with diabetes who are at highest risk for hospitalization due to preventable complications such as end-stage renal disease or lower extremity amputations.

In comparing state and national data, the ICD-9-CM codes used to define diabetes were 250.0 through 250.9. Newborns (i.e., persons with the same birth and admission dates) were excluded from the analysis. Analysis that does not involve national comparisons used a broader range of ICD-9-CM codes adopted from conventions used in publications issued by the National Institute of Diabetes and Digestive and Kidney Diseases:

251.3: post-surgical hypoinsulinemia
357.2: polyneuropathy in diabetes
362.00 - 362.02: diabetic retinopathy
366.41: diabetic cataract
648.00 - 648.04: diabetes mellitus in pregnancy, but not gestational
775.1: maternal diabetes mellitus affecting fetus or newborn.

ICD-9-CM code ranges for co-morbid conditions analyzed in this report were developed by a sub-committee of the Diabetes Council.

The focus of Tables 1 through 4, and 26, 28 and 29, and figures 1 through 3 is primary diagnosis at time of discharge. Primary diagnosis is the first listed diagnosis or the condition listed as the main reason or cause for the hospitalization of a patient. Included in Table 1 and Figures 1 through 3 is a comparison of New Jersey discharges with a primary diagnosis of diabetes with data for the nation and the northeast region. In Table 2, charges, in dollars, for New Jersey hospital stays are presented by diagnostic category. Tables 3 and 26 compare numbers of discharges and average lengths of stay for diabetes as the primary diagnosis and by mention or non-mention of diabetes as one of nine possible discharge diagnoses. Tables 28 and 29 look at diabetes diagnoses that are Ambulatory Care Sensitive (ACS). ACS diagnoses are primary diagnoses for which timely and effective ambulatory care within the last 30-60 days might have prevented hospital utilization. These diagnoses were classified as ACS by the Ambulatory Care Access Project of the Center for Health and Public Service Research of the Wagner School of New York University (NYU). The ACS Project has identified the following diabetes diagnoses as being ambulatory care sensitive: diabetes with ketoacidosis (250.1), diabetes with hyperosmolar coma (250.2), and diabetes with other coma (250.3).

Discharges with any mention of diabetes are the focus of all other tables. Numbers and rates of discharges, average length of stay, and days of hospitalization are analyzed by gender, age, race, ethnicity, and county of residence. Any mention of a diagnosis refers to hospital discharges with that diagnosis listed as one of nine possible diagnoses in the hospital records. Tabulations were done for any mention of diabetes and any mention of diabetes with selected conditions such as lower extremity amputations and end-stage renal disease. The rates presented in the document represent numbers of discharges per population group, not numbers of individuals discharged (i.e., if an individual had two separate admissions for inpatient care during the year, the individual would be counted twice in the data).

Adjustments to the data were not made to account for case-mix (a measure of the mix of cases being treated by a particular health care provider [hospital] that is intended to reflect the patients' different needs for resources).[8] Case-mix may affect discharge diagnosis rates for diabetes and its complications, as well as average length of stay. It is the intention of this document to demonstrate variation in resource needs by county, not to make hospital performance comparisons.

Caution should be exercised in the interpretation of rates and ratios based on small numbers. Chance variations in the number of events occurring in areas with small populations or in sub-groups of the total population can cause rates to fluctuate widely over time.

References

1. Lawrence, Linda and Margaret J. Hall. 1997 Summary: National Hospital Discharge Survey, Division of Health Care Statistics, National Center for Health Statistics, Centers for Disease Control and Prevention, (August 18, 1999). Atlanta, GA.

2. New Jersey Behavioral Risk Factor Surveillance System (BRFSS) 1996 through 1998.

3. Pokras Robert, Chief of the Hospital Care Statistics Branch of the National Center for Health Statistics of the Centers for Disease Control and Prevention, E-mail transmission. (February 1, 2000).

4. Cooper, Megan (Editor), The Dartmouth Atlas of Health Care 1998, American Hospital Association, 1998.

5. Jencks Stephen J., Timothy Cuerdon, Dale R. Burwen, Barbara Fleming, Peter M. Houck, Annette E. Kussmaul, David S. Nilasena, Diana L. Ordin and David R. Arday. "Quality of Medical Care Delivered to Medicare Beneficiaries, A Profile at State and National Levels", American Medical Association, Journal of the American Medical Association (JAMA), October 4, 2000, Vol. 284, No. 13.

6. New Jersey Department of Health and Senior Services, Division of Family Health Services, Special Child Adult and Early Intervention Services, Diabetes Control Program, The Burden of Diabetes in New Jersey: A Surveillance Report. November 1999.

7. National Institutes of Health, National Institute of Diabetes and Digestive and Kidney Diseases. Diabetes in America, 2nd edition. NIH Publication No. 95-1468. 1995

8. Alpha Center: Glossary of Terms Commonly Used in Health Care, Web Page of Alpha Center, 1350 Connecticut Ave., NW, Suite 1100, Washington, DC, December 2000.